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NEWSPAPER

COMPUTERWORLD

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Computer II Decision Upheld

By Phil Hirsch
CW Washington Bureau

WASHINGTON, D.C. — AT&T's right to enter the on-line information services and terminal markets on a deregulated basis was firmly upheld here Nov. 12 when the U.S. Circuit Court of Appeals endorsed the Federal Communications Commission's decision in its Second Computer Inquiry, known informally as "Computer II."

Only a reversal by the U.S. Supreme Court now prevents the phone company from offering terminals ("customer premises equipment") and "enhanced" (computer-based) services beginning Jan. 1 through American Bell, Inc., its recently formed, separate, deregulated subsidiary. The chances of a reversal "are about the same as the likelihood of a snowstorm in the Sahara," according to one observer.

In making its ruling, the appeals court concluded that the FCC was justified in preempting the states' regulatory authority when it issued its Computer II decision. This bodes defeat for those states and private organizations that have filed appeals of the U.S. vs. AT&T antitrust case settlement.

A key provision of that settlement empowers AT&T, subject to approval of the Justice Department and Judge Harold Greene, who presided over U.S. vs. AT&T, to acquire assets from Bell operating companies and take other actions that normally have to be approved beforehand by state regulatory agencies.

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IRS Eases Regulations On 10% Withholding, But Bank DPers Say It's Still a Hardship

By Lois Paul
CW Staff

Temporary regulations released last week by the Internal Revenue Service have eased the DP burden faced by banking institutions that must comply by July with "tax withholding at the source" legislation, but they by no means have softened opposition to the concept.

The "withholding at the source" section of the Tax Equity and Fiscal Responsibility Act of 1982 requires banks to withhold a flat 10% from dividends and interest-earning accounts and pay that 10% directly to the IRS. The IRS is accepting comments on both the temporary and the original IRS regulations until Jan. 14; it will then hold a hearing on the regulations.

Nancy Hohnstein, vice-president of Security Pacific National Bank's Banking Systems Division in Los Angeles, estimated the cost of implementing the required changes at $500,000, with possibly another $500,000 to print exemption claim forms, develop a retrieval system for those forms and institute office operation procedures and training to deal with the new requirements.

For Hohnstein, one of the questions the temporary regulations have not answered involves the IRS' retrieval requirements for copies of exemption claim forms filed by bank customers who do not want taxes withheld. "Also, the requirements do not indicate what form of year-end report we will have to do for the IRS," she said.

The DP manager for another California-based bank estimated that it will cost his organization just under $2 million to make the software changes required to comply

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One Identifies Suspected Mobsters

Data Bases Credited for Record FBI Activity

By Jim Bartimo
CW Staff

WASHINGTON, D.C. — The Federal Bureau of Investigation compiled its best record yet for criminal investigations and prosecutions in 1981 and 1982, and the bureau credits much of that success to a system of data bases set up in 1978.

Primary among those data bases is the Organized Crime Information System, which maintains the names of suspected mobsters along with their home and business addresses, license plate numbers and other information. "As we get into more complex cases, we find that the paperwork is tremendous, so we put the information on the data base and call it up when we need it," FBI Supervisory Special Agent Wiley Thompson said in a recent interview.

Another of the data bases set up four years ago is the Investigative Support Information System, used for more general-purpose investigations and the prosecution of criminals. The Foreign Counterintelligence System helps track international crime.

Set up by the bureau's Technical Services Division, the data bases supplement the FBI's National Crime Information Center and the Computerized Criminal History system, which were developed for law enforcement agencies around the country. The newer data bases were designed specifically for in-

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Target the Application

That was the message issued by two super-mini vendors last week as Data General Corp. introduced the Eclipse MV/4000 (left) for office and industrial automation and Hewlett-Packard Co. added the HP 9000 for engineers and scientists (stories on Page 8).

STRESS — *Why Being a DP Manager Endangers Your Physical and Mental Well-Being*

By Marguerite Zientara
CW Staff

BETHESDA, Md. — DP management may be hazardous to your health.

Besides experiencing high job stress levels that can lead to physical and mental illness, management information system managers get less social support than other managers, according to a survey of 241 MIS managers.

On an intensity scale of 1 to 5, managers generally expressed high job dissatisfaction, according to Madeline Weiss, head of Weiss Associates, a consulting firm here, and an adjunct professor at American University's Center for Technology and Administration in Washington, D.C.

Respondents to the 133-question survey, sent to 400 people, most frequently reported the following symptoms of strain: letting things slide; feeling restless and unable to concentrate; becoming less communicative; feeling irritable, tense, uptight, fidgety and nervous; eating too much; feeling tired; experiencing low energy and excessive fatigue; having misdirected anger; and feeling dissatisfied with their jobs.

Because a large body of previous research has shown that these strain symptoms "clearly are predictors of ill health," according to Weiss, she is "concerned for the health prognosis of information systems managers."

From an organizational perspective, she believes stress symptoms "must be affecting [managers'] ability to perform at the high level required by their demanding

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IRS Eases Withholding Regulations

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with the new regulation. This breaks down to approximately 38 staff-months of time, between $250,000 and $330,000 in personnel costs (depending on the extent of the use of contract programmers) and $100,000 for computer time.

Recalling the Employee Retirement Income Security Act pension regulations that became effective several years ago, the DP manager said, "Those were complicated and hard to implement, but this thing makes that look like a Sunday picnic."

Joseph E. Allard, vice-president of the U.S. Trust Co. of New York, said the only decision his organization has made so far in regard to the tax regulations is to develop a separate subsystem, run all of the interest transactions through it and then apply the withholding. The scope of the modifications to existing software depends on the exceptions that will have to be processed, he noted.

"I have been concentrating on getting systems in place that will be capable of dealing with the individual questions of exactly where we do and where we don't withhold," reported Bob Matthews, second vice-president of New York's Chase Manhattan Bank. "The proposed regulations on broker transactions are very incomplete. It is hard to make any real sense out of them.

"But," he added, "the rest of it doesn't look all that bad."

First Deadline

The first deadline the banking institutions face is Jan. 1, when they must comply with 1099-type reporting to IRS about income earned by their customers. "This has always happened," Matthews said. "It has just been expanded somewhat. It picks up other types of interest that had previously been exempt."

There are huge problems with getting this in place, he stated. "Once you capture that information, it is almost just as easy to withhold."

Tom Thomas, fund manager of the U.S. League of Savings Associations, speculated that it will take close to three man-years to program the required changes in software that will allow the banks to comply with the regulations. "Not only that, but it impacts operating time," he observed.

Despite IRS cooperation with the banks, "this does not mean we are enamored with the requirement to withhold," Thomas pointed out. "We feel it is not a prudent way to collect those taxes, and we oppose the concept of taxing savings and collecting revenue from the source of the savings and loan."

The American Bankers Association (ABA) is "opposed to withholding of dividends in principle," Jim McLaughlin, ABA public relations counsel, said last week. The ABA will continue to work for the tax legislation's repeal.

The ABA membership basically feels that the current regulations seem to be workable, but it is concerned about how they may be changed in the future, he said.

Michael J. Hoogendyk, executive director of the Association of Information Managers for Savings Institutions (Aimsi), said, "The Treasury Department is saying they are bending over backwards to make it easier. It might make it easier to implement, but it is still a bear."

Firm Lays Off About 100 DPers, Cites State of Insurance Business

BOSTON — Commercial Union Insurance Companies last week laid off "around 100" programmers, systems analysts and clerical DP personnel. The company cited poor conditions in the property and casualty insurance business.

Notified last Monday, the workers were given varied notice, according to public relations coordinator Henry Stimpson. All notices comprised "a reasonable amount of time to find another job," Stimpson said, adding he thought they were "very ample."

The layoffs were based on seniority; 95% of the newly dismissed workers had worked for the company for less than two years in the internal and external DP subsidiary called Commercial Union Automation Services, Inc.

How will DP operations fare with 100 fewer people? No hardship is expected. "It's basically a matter of streamlining and consolidating operations," Stimpson explained.

For those terminated last week, an outplacement center will be set up with "special telephone facilities. We'll help in the drafting of resumes and we'll contact the personnel departments of other companies in the Boston area," Stimpson noted.

Corrections

An incorrect headline accompanied the story on Page 44 of the Nov. 15 issue describing Eagle Software, Inc.'s I-Xcel and I-Spy software.

The Datalynx/3274 recently introduced by Local Data, Inc. was priced at $666 in "Protocol Converter Allows IBM 3278, 3280 Emulation" [CW Nov. 8]. The product actually costs $6,000 with nine asynchronous ports, or $666 per channel.

In "Relational Models Viable in Commercial World" [CW, Oct. 25], the author, Dipankar Basu, identified the developers of Accent R, a data base management system for Digital Equipment Corp. minicomputers, as Relational Information Systems, Inc. The Cupertino, Calif., firm's correct name is National Information Systems, Inc.

IGC, Inc. is a new company cofounded by the former president of Vesco Instruments, Inc., not Veeco Instruments [CW, Oct. 25].

John A. Roth has been appointed president of Bell-Northern Research Ltd., which is owned 70% by Northern Telecom Ltd. and 30% by Bell Canada. The president of Northern Telecom Ltd. continues to be Edmund B. Fitzgerald [CW, Oct. 15].

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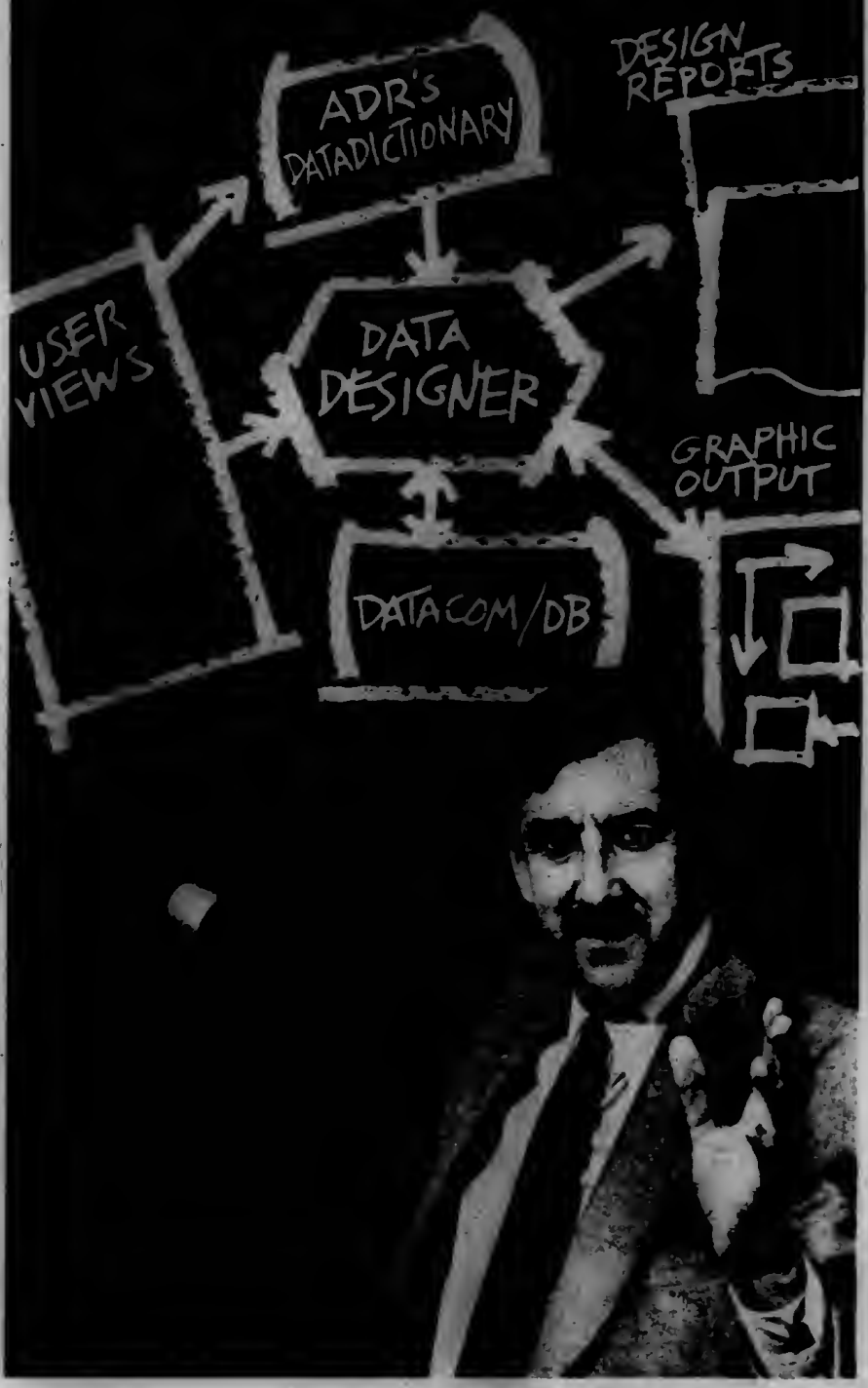
James Martin & ADR join forces with DDI's DATA DESIGNER.



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Says Martin, "DATA DESIGNER and DATACOM complement each other in producing a data base design that is both flexible and easily understood. This flexibility and simplicity have been sorely lacking in the past."

DATA DESIGNER is now part of ADR's integrated network of systems software products—solving today's problems and building a solid foundation for tomorrow. For further information contact your local ADR office or send in the coupon.

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Operation Exodus' First Year a Good One

By Jim Bartimo
CW Staff

WASHINGTON, D.C. — Operation Exodus — the U.S. Customs crackdown on illegal exports of high-tech equipment — has increased its personnel, areas of investigation and its convictions since its inception over a year ago.

The project was initiated to stop the flow of technology to Eastern bloc countries and the USSR in the belief that the goods are being used for military purposes [CW, March 1].

As of Sept. 30, Operation Exodus had yielded 765 seizures of equipment worth some $55.6 million. These seizures of improperly licensed or otherwise illegally exported equipment resulted in 30 completed criminal cases and 70 convictions, Exodus investigator Henry Mauer said in an interview last week.

"Computers have made up a significant percentage of the seizures — about 30%," Mauer noted.

About 20 more cases involving some 40 suspects are currently awaiting court action. "We have processed 2,481 referrals to the command center that came from 55,000 examinations of packages being exported," Mauer said.

The 13 ports initially covered by Exodus have been expanded to every seaport, airport and border patrol in the country. An increase in the number of agents from 13 to 35 has also brought an increase in training.

"Exodus is really a coordinated effort of supervisors, agents and import specialists," Mauer said. "We work closely with the Pentagon for their expertise in investigation and their knowledge of equipment [that may be used for military purposes.]"

Since Exodus was conceived as an inspection project, investigations usually stem from an illegal or out-of-date export license. "We do normal criminal investigations as well as licensing problems," Mauer said. "It's a lot like drugs — only cleaner. The fear is that once the equipment goes out of the country . . . It could end up in an Eastern bloc country."

Once a seizure is made, an investigation is held. If the case merits prosecution, it is turned over to the Justice Department.

U.S. Backing Creation of Tech Trade Program

By Jake Kirchner
CW Washington Bureau

WASHINGTON, D.C. — American trade officials travel to Geneva, Switzerland, this week for multinational talks during which the U.S. will urge development of a high-technology and services trade program. The White House hopes international receptivity to this proposal will temper rising protectionism sentiment in government and business at home.

Congress has in the last year put forward numerous proposals for restricting high-technology imports into the U.S. in order to protect American industries. That movement is even stronger today, following the recent election campaigns, which produced considerable anti-Japanese rhetoric.

If the General Agreement on Tariffs and Trade (Gatt) talks in Geneva do not evoke some willingness from the U.S.' trading partners to seek an accord for more free trade, particularly in high technology, it will be difficult to hold at bay the protectionists on Capitol Hill, according to government and industry officials here.

Vocal Exceptions

On the whole, the electronics industry has been strongly supportive of free trade and against government intervention. But there are a few vocal exceptions, particularly in the semiconductor industry, whose sales have been flat due to the recession as well as from growing competition from Japan.

The Semiconductor Industry Association (SIA) is completing a study of the Japanese government's targeting of specific industries for assistance. That study may lead to a request to the U.S. government for some sort of action against the Japanese, according to George Scalise, senior vice-president of Advanced Micro Devices Inc. and head of the SIA trade committee.

On the government level, the U.S and Japan continue to seek a resolution to the trade frictions between the two countries. Several weeks ago, representatives of the two nations agreed on steps to reduce barriers to high-technology trade.

Sham Agreement

Privately, however, industry representatives here call that agreement a sham and see no practical benefit from it other than to keep the two countries' dialogue continuing. They also note a recent U.S. Trade Representative's report to Congress which stated, in part, that the Japanese have not moved very quickly on past promises to reduce their trade barriers.

And even in the White House, which has to date rejected any intervention on behalf of the electronics industries, forces are pushing for some restrictions on high-technology imports to bolster U.S. companies. Some industry observers close to the administration deliberations say some trade restrictions are inevitable, but goverment officials strongly dispute this.

While there is clearly a greater realization within the administration that high-technology industries are important to the country's future, one observer, former National Telecommunications and Information Administration official Arthur Bushkin, suggests there is a strong political component as well.

Bushkin, now president of the Washington, D.C.-based consulting firm of Telemation Associates Inc., explained that the sudden White House interest in high-technology industries was influenced in part by the so-called "Atari Democrats," who want to enhance the health and growth of high-technology industries instead of favoring old-line manufacturing sectors, such as autos and steel, as the way to ensure continued U.S. economic health and world leadership.

Added to that, Bushkin noted, was the considerable campaign rhetoric of Walter Mondale, a contender for the 1984 Democratic presidential nomination, directed against Japanese imports. In this scenario, the White House must get President Ronald Reagan at the forefront of the newly politicized high-technology issue in order to prepare his reelection bid.

FBI Credits Record Years to Data Bases

(Continued from Page 1)

vestigations by FBI agents.

The data bases run on an IBM 3081 mainframe and will eventually give the FBI's 59 field offices and 430 satellite offices access via terminals to central files that had previously been on paper and in file cabinets. "We have 29 offices on-line, including some satellite offices," Thompson said. "Our goal is to provide headquarters and offices with computer-technology-based information, including collection, collation, analysis and dissemination of investigative information."

To explain how the Ocis data base is used, Thompson offered as an example the case of an agent who suspects that an address is a headquarters for organized crime. By entering into Ocis the license plate numbers of the cars driven by people entering the building, the agent can find out whether they are suspected members of a criminal organization.

The data base will also tell if they have criminal records and give other information that was once difficult to compile quickly. "It provides quicker access to information and rapid transfer of that information," Thompson said. "It's faster than waiting for it in the mail."

The system can also be used to check the credentials of a potential informant. "If a guy says he used to run with Joe Smith in New York, I don't know all the people in New York. I might just know some of the bosses," Thompson said. An agent checks the name of Joe Smith to ensure the informant's story is true before paying him for information.

The major benefits of the new system are a "reduction in time for file review, elimination of unneccessay interviews and a methodology to find relevant data," Thompson said.

Because the information now on-line previously existed in paper files, Thompson said that privacy issues are not a problem for the bureau. "We do have a protection system built in," which includes password access, audit trails and physical security of equipment.

Ocis 'Eliminates' Several Crime Families

WASHINGTON D.C. — The Federal Bureau of Investigation's Organized Crime Information System (Ocis) was instrumental in the "elimination" of several families from organized crime, FBI Supervisory Special Agent Wiley Thompson said here last week.

"The majority of 'bosses' and hierarchy of the major [La Cosa Nostra] families across the U.S. were indicted and/or convicted" in 1981 and 1982, according to an informal report of the FBI's organized crime program released by an FBI spokesman.

Pointing out that the Cosa Nostra's power emanates from five New York families, the report outlined the results of investigations on four of those families:

- *Bonanno Family*. The entire hierarchy of this family has been indicted and convicted on the Racketeer Influence Corrupt Organization (Rico) statute, a part of the U.S. Code that outlaws the financing of a legal business with ill-gotten booty.
- *Colombo Family*. The boss of this family, Alphonse Persico, has been convicted on extortion charges and the acting boss, Carmine Persico, has been convicted of parole violation. Alphonse is currently a fugitive, having forfeited a $250,000 bond, and Carmine is incarcerated at the Danbury (Conn.) Federal Prison.
- *Genovese Family*. The boss of this family, Frank Tieri, has been convicted on four counts of Rico violations. He was sentenced to 20 years in prison but died of natural causes shortly afterwards. Another family member, John Russo, was convicted of extortion charges and sentenced to three years in prison.
- *Gambino Family*. Robert DiBernardo was convicted after a two-year investigation of the U.S. pornography industry. Forty-one other individuals were arrested as a result of that investigation.

Indictments, investigations and prosecutions of suspected mobsters have also taken place in Philadelphia, Boston, Milwaukee, Chicago, Cleveland, New Orleans, Los Angeles, Denver and Kansas City, Mo., according to the FBI report. Other areas currently under investigation include motorcycle gangs and drugs.

Efforts Urged to Keep High Tech From USSR

By Jake Kirchner
CW Washington Bureau

WASHINGTON, D.C. — U.S. intelligence agencies and companies must become more active in fighting the diversion of high technology to the Soviet Union because government export authorities can no longer adequately control the problem, the Senate Permanent Investigations Subcommittee said last week.

The recommendation was contained in a report that culminated an 18-month inquiry by the subcommittee, which last May held five days of hearings on the subject [CW, May 10, 31]. Based on its investigation, the subcommittee concluded that "the Soviet Union has made the acquisition of United States . . . technology an important priority."

Subcommittee investigators and witnesses at the May hearings said the Soviets have been very successful in illegally obtaining massive amounts of electronic goods and know-how for military purposes. For example, testimony indicated the Soviets have acquired a complete semiconductor manufacturing facility based largely on products from Intel Corp., Fairchild Camera and Instrument Corp. and Rockwell International Corp.

According to the subcommittee, most of these diversions of U.S. high technology were orchestrated by the KGB, the Soviet intelligence and security agency whose former chief, Yuri V. Andropov, is the new Soviet leader.

"There is no reason why the West should contribute, by weak export controls, to the Soviet Union's technological needs," the subcommittee said last week. "Through improved intelligence, the government can learn more precisely what the Soviets want and need," allowing the export control agencies to target better their efforts.

The panel added, "Private industry must contribute directly to any effort to halt the technology drain. There is a lack of sufficient security precaution at the sources of production in the technology industries."

Establishment of Center

Besides calling for more vigorous intelligence work in export control, the subcommittee report recommended establishment of a center for technical expertise that would aid in technical evaluation of export proposals. Located at a national laboratory, where it would be free from the influence of policymakers, the center would also conduct research into technical questions related to export matters.

The report also called for increased Commerce Department and Defense Department (DOD) cooperation to determine foreign availability of high technology, which would also allow the government to reduce the number of items controlled and thus free resources. In addition, the DOD should study the technology already lost to the Soviets, the subcommittee said, so that export authorities can better target the items which the Soviets are likely to seek in the future.

Information from the DOD study, the subcommittee said, would be the foundation for creation of an automated data base that could be used to make "accurate, up-to-date and consistent licensing decisions and recommendations."

Discussing the role of private industry, the report cited the Federal Bureau of Investigation's Development of Counterintelligence Awareness program and similar efforts by the DOD to educate private companies in the problems of technology transfer. It suggested that other government agencies involved with export control initiate similar programs.

In addition, the subcommitee suggested that the U.S. Customs Service is better equipped to handle export control enforcement than is the Commerce Department. The panel also recommended stiffer penalties for export violations, enhanced authority and increased investigatory tools for federal agents and amendment of the Freedom of Information Act to stop foreign nations from obtaining government data.

Articles Sought On Networks

The Jan. 31 *Computerworld* Special Report on data communications networks will address the communications explosion and how users are trying to harness it. We want you to contribute to the special report by addressing any key networking issue such as:

- How can reliability, integrity and security be obtained and maintained?
- What are the long- and short-haul alternatives to Bell?
- When is a private branch exchange more appropriate than a local-area network based on coaxial cable?

Dec. 10 is the deadline for manuscripts, which should be no longer than seven double-spaced, typed pages. They should be sent to Bruce Hoard or Jim Bartimo, *Computerworld*, P.O. Box 880, 375 Cochituate Road, Framingham, Mass. 01701.

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Computer II OK Seen Planning Boom for Users

By Phil Hirsch
CW Washington Bureau

WASHINGTON, D.C. — The appeals court ruling that upheld the Federal Communications Commission's (FCC) Second Computer Inquiry decision will make planning much easier for AT&T's customers, attorneys for two user groups agreed last week.

"If the FCC's Computer II ruling had been overturned, the timing of the changes initiated by that proceeding and by the [U.S. vs.] AT&T antitrust case settlement would have been upset," explained Brian Moir, Washington counsel to the International Communications Association, which represents most of the country's largest corporations.

The first change is scheduled for Jan. 1, when users can begin to acquire terminals from American Bell, Inc., AT&T's recently formed subsidiary, rather than from Bell operating companies. For users, this means establishing new business relations with new business people, and ABI's freedom to sell as well as lease equipment will add a new dimension to the user's planning chore, Moir said.

Had the Computer II decision been overturned, Moir explained, much of the work users have already done to prepare for the new, competitive telecommunications environment would have to be redone, and there would be great uncertainty about whether and how to proceed.

DOD View

Randolph McPherson, chief regulatory counsel to the U.S. Department of Defense (DOD), expressed essentially the same view. He added that he is glad the court found that the Computer II decision substitutes one regulatory tool for another rather than doing away completely with regulation of enhanced services and terminal equipment.

In the latter case, McPherson explained, DOD procurement regulations, now based on dealing with regulated communications carriers, would have to be rewritten.

In interviews with other observers of the case — including telecommunications suppliers as well as users — the importance of Computer II's separate subsidiary provision was stressed. Moir is "hoping that structural separation will be successful." Jerome Dreyer, president of the Association of Data Processing Service Organizations, Inc., still feels the separation mandated by the commission is inadequate.

But Dreyer doesn't believe Congress will do anything substantive in this area next year. One reason is that it wants to "wait and see how Computer II is implemented." Another reason, Dreyer said, is AT&T's unwillingness to see any strengthening of the separate subsidiary provision.

Walter Hinchman, former chief of the FCC's Common Carrier Bureau and a key participant in the debate that led the commission to deregulate the marketing of enhanced services and terminals, said there is strong sentiment within the commission to do away with the separate subsidiary provision. Hinchman, who has become one of the phone company's most outspoken critics, also believes the appeals court's finding that the separate subsidiary is a necessary regulatory tool will have only transitory impact.

"It's quite common for a court to decide a telecommunications policy question one way and then change its mind a year or so later," he said.

The Computer and Communications Industry Association (CCIA), the lead appellant in the Computer II case decided Nov. 12, is analyzing its options, a process that will take several days, said CCIA Vice-President Stephanie Biddle.

Appeals Court Says Yes to Computer II

(Continued from Page 1)

The appeals court also concluded that the FCC can forbear from applying Title II of the 1934 Communications Act, the law mandating most of its regulatory authority. The decision that AT&T can offer customer premises equipment and enhanced services through American Bell assumes that the commission possesses this "forbearance" authority.

Opponents of the Computer II decision, who include much of the computer industry, had stressed that the FCC erred when it decided that enhanced services and terminal equipment are outside the scope of Title II.

However, the appeals court's ruling "does not give the commission unfettered discretion to regulate or not regulate common carrier services," said Judge Edward A. Tamm, who wrote the appeals court opinion. "We emphasize ... that our sanction is ... given in light of the ... alternate regulatory scheme adopted by the commission." Tamm was referring to a provision of the Computer II decision that requires AT&T to offer terminal equipment and enhanced services only through one or more separate subsidiaries.

Backed by the Justice Department, FCC Commissioner Joseph Fogarty and some members of Congress, AT&T has repeatedly said it would try to do away with this requirement. The appeals court decision is seen as making the phone company's task more difficult.

No Substitute for FCC

Noting that some computer industry groups — especially the Independent Data Communications Manufacturers Association, which represents modem manufacturers — say Computer II fails to provide adequate separation of AT&T's regulated and unregulated activities, Tamm wrote that these critics "would have this court substitute its judgment for that of the commission." However, "this court is ill-prepared to decide which mechanical requirements would best implement the structural separation scheme.

"Our only province is to determine whether the separation requirements were based on a consideration of the relevant factors and whether there has been a clear error of judgment." Since neither of these were found, "we uphold the Computer II separation regulations in their entirety."

The Computer II decision — actually a series of decisions issued by the FCC between 1979 and 1981 — was required by the convergence of communications and data processing, the court pointed out. By combining the former, which traditionally has been regulated, with the latter, traditionally unregulated, this convergence left the FCC with the choice of regulating data processing or deregulating the associated communications offerings.

The court agreed with the FCC's choice of the second option, which was based on the conclusion that enhanced on-line services — those combining DP and communications — plus terminals are beyond the scope of Title II. Mainly this is because Title II regulates "common carriage," the decision explained. It pointed out that common carriage involves provisions of a noncompetitive service and an undertaking by the supplier "to carry for all people indifferently."

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Stress Hazards Surveyed

(Continued from Page 1)

and critical jobs."

An "intriguing" finding is that strain symptoms decrease with the age of the MIS manager. "Those between 55 and 60 showed lower levels of stress than those who are 25 to 30," Weiss remarked.

"This may indicate that either managers adapt to the strains with age or that those who feel the greatest strain leave their jobs when they are most knowledgeable and valuable to their organizations in their roles as MIS/DP managers," Weiss said.

The survey revealed the various causes of strain symptoms as work overload, role ambiguity, role conflict, responsibility for people, lack of participation in decision-making, being in an innovative role in the organization, career development concerns, concerns about the structure and climate of the organization and lack of feedback concerning job performance.

While a number of those stresses are "intrinsically related to the nature of the MIS manager's job," Weiss noted, others can be reduced through a variety of means.

The stressful aspects of responsibility for people can be reduced through management training programs and the stress of lack of participation in decision-making "also can be potentially reduced by organizations," she said.

Three stresses that have a "particularly strong impact on strain symptoms" — lack of feedback, career development concerns and structure and climate concerns — can be alleviated in organizations, Weiss said, pointing out that "changes cannot be effected easily, but there are methods available."

Weiss' survey defined social support as help (assistance or information) and support (emotional concern and feelings) from others. Respondents were asked to rate the support they received from their immediate supervisor; peers at work; subordinates at work; spouse or cohabitant; and friends and relatives.

VOX POPULI

Who got 75% of the vote:

(a) Democrats;

(b) Republicans;

(c) SyncSorts.

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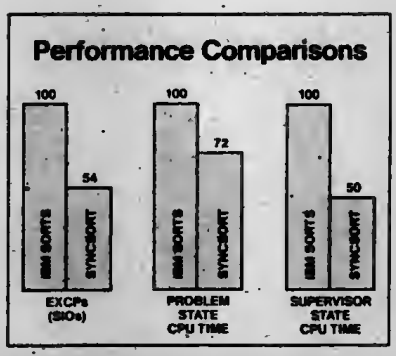

If you choose (c) as the correct answer, you're right: SyncSort did better in its election than either of the two Great Political Parties did in theirs.

Our election was, of course, IDC's Sixth Annual Survey of sort programs used by OS and OS/VS data processors in the U.S. In this year's election, 75% of those polled said that they now sort with SyncSort!

The following figures will show the magnitude of this year's landslide, as well as the steady growth of SyncSort's power as a vote-getter in recent years:

PERCENT OF USERS IN THE U.S.

Sort Used	1982	1980	1978
Syncsort	75%	69%	54%
IBM	19%	25%	42%
Other	6%	6%	4%

We also received another signal honor that warmed the cockles of our hearts. Datapro's 1982 "User Ratings of Proprietary Software" awarded top honors to only two programs this year. One of those two was SyncSort!

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(2) SYNCSORT RAISES PROGRAMMER PRODUCTIVITY: Our programs always get the programmer vote. One reason that Syncsort is so popular with the people in the trenches is that it takes a burden off their backs. Using SyncSort's battery of advanced features, for example, it is often possible to reduce the time required for simple reports from five programmer days to one.

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DG Takes Wraps Off 32-Bit Eclipse MV/4000

By Bruce Hoard
CW Staff

WESTBORO, Mass. — Data General Corp. last week unwrapped the Eclipse MV/4000, a low-end 32-bit minicomputer targeted for the burgeoning office automation and industrial automation marketplaces.

Also introduced were an enhanced version of DG's real-time AOS/RT32 operating system, a cartridge tape system, a laser and letter-quality printers, a 50M-byte Winchester-type disk subsystem and an intelligent communications controller.

The MV/4000 offers twice the performance of any computer — including the Digital Equipment Corp. VAX-11/730 — in the 32-bit virtual storage class, according to a DG spokesman. He also claimed the MV/4000 is the only one in its class to offer both a real-time operating system for dedicated applications (AOS/RT32) and a compatible, general-purpose virtual operating system for multiuser applications and program development (AOS/VS).

The firm based its performance claim on the Whetstone computational performance test, based on a series of Fortran programs.

The MV/4000 features up to 8M bytes of main memory with an on-line storage capacity of 4.7G bytes. It can support up to 64 terminals, depending on the application, the DG spokesman said.

An MV/4000 with an AOS/RT32 license is priced at $27,500; with an AOS/VS license, it costs $30,000. For the integrated office automation market, the new processor serves as the backbone of an eight-terminal packaged system costing $79,500. That system, which becomes part of DG's Comprehensive Electronic Office (CEO) lineup, includes the MV/4000 with 2M bytes of main memory, 50M bytes of disk storage, a streaming tape drive for disk backup, eight smart alphanumeric CRT terminals and two 3S char./sec letter-quality printers.

Offered with the eight-terminal system are DG's 32-bit virtual operating system, AOS/VS; CEO word processing software; CEO Information Management software (electronic mail, electronic filing and administrative support); CEO decision support tools; and X.25-based local and remote packet-switching communications capabilities.

For the industrial automation market, the processor handles such applications as computer-aided design and manufacturing and supervisory control applications.

Enhanced AOS/RT32

AOS/RT32 has been enhanced to permit data to be transferred using either a high-speed multiprocessor communications link or intelligent synchronous/asynchronous communications interfaces, the spokesman noted. That means the MV/4000 can be linked to several remote microprocessor-based machines.

The MV/4000 is compatible with DG's other 32-bit and 16-bit systems.

The company also announced a remote diagnostic assistance service and a 96% to 99% guaranteed uptime program for the new processor.

Other DG announcements include:

- The Xerox Corp.-developed LDP/12 Laser Document Printer, which prints 90,000 spot/sq in. at speeds up to 12 page/min. It costs $25,000.
- The 50M-byte Model 6234 Winchester-type disk subsystem, which works on DG's Eclipse MV family, Eclipse and Nova systems. It costs $10,500.
- The Model 6231 cartridge tape subsystem, which offers 15M bytes of storage capacity and comes in two models. The Nova/Eclipse version costs $10,850 and the Micronova version costs $10,550.
- The basic 35 char./sec Model 4518 letter-quality, serial, impact printer. It costs $2,800 with several options available.
- The ISC/2 intelligent synchronous communications controller board, featuring 128K bytes of on-board memory and offering the following hardware-selectable interfaces: RS-232C, RS-449/RS-423A and RS-422A. It costs $4,000.

Initial shipments of the MV/4000 will be made in December from the firm at Rt 9, Westboro, Mass. 01581.

DG to Go With CSMA/CD

WESTBORO, Mass. — In addition to introducing its Eclipse MV/4000 last week, Data General Corp. announced its intention to offer within the next two years products compliant with the emerging IEEE 802 carrier-sense multiple access with collision detection (CSMA/CD) baseband local-area network standard.

In addition, DG will offer digital private branch exchange (PBX) technology for connecting terminals to processors while integrating voice and data communications. "Data General will pursue PBX technology via close cooperation with one or more PBX vendors," the company said.

The company currently provides a token-passing networking product called the Xodiac Network Bus System. Token passing is an alternative line access scheme to CSMA/CD.

The decision to go CSMA/CD baseband was based on DG's participation on the 802 Standards Committee and its evaluation of relevant very large-scale integrated technology and its availability, a spokesman said. However, the firm will also develop broadband CATV or fiber-optic media for long-distance and high-speed applications, the spokesman added.

The firm said it plans to support the International Standards Organization's (ISO) Transport Layer Protocol standard as part of its plan to evolve the Xodiac system on a parallel course with the ISO Open Systems Interconnect reference model.

HP Extends Technical Supermini Family

By Jeffry Beeler
CW West Coast Bureau

PALO ALTO, Calif. — Hewlett-Packard Co. last week expanded its technical processor family at the high end with three 32-bit personal computers that reportedly outperform conventional superminis for a fraction of the price.

HP's 9000 series processors, primarily targeted for engineering and scientific end users, are built around five very large-scale integration (VLSI) circuit chips that reportedly deliver the power of a Digital Equipment Corp. VAX-11 superminicomputer. Each of the five chips boasts up to eight times the density of conventional integrated circuits.

Capable of executing 1 million instructions per second, members of the HP 9000 series have a 55-nsec machine cycle, a 110-nsec memory cycle and a 6M byte/sec I/O rate.

With the addition of the HP 9000 family, the company's technical processor line now consists of four groups, which also include the HP 80, HP 200 and HP 1000 series. In general, the 9000-class processors provide 12 times greater performance than their 16-bit Series 200 counterparts, the spokesman said.

Said to occupy about as much desk space as a daily newspaper page, the HP 9000 family currently includes three models — the 500, 600 and 700. The 500 incorporates one CPU board and can be field-upgraded to both the 600 and 700, which contain two and three such boards, respectively.

Each of the three models in turn can be packaged as an integrated workstation, rack-mounted box or minicabinet. The workstation combines a monochromatic or color graphics CRT screen, keyboard, printer, 10M-byte Winchester disk unit, 256K-byte floppy disk system and main memory, which can be expanded to 2.5M bytes.

Software for the HP 9000 series includes HP's single-user Basic language operating system and HP-UX, a time-sharing-oriented derivative of Western Electric Co.'s Unix.

HP-UX provides basically the same features as Unix plus several enhancements, including Image/9000 data base management software, two- or three-dimensional graphics capabilities and support of Xerox Corp.'s Ethernet. The operating system also supports three programming languages, a terminal emulator for asynchronous communications and HP's Shared Resource Manager, which allows HP 9000s to be interconnected with each other or with the company's HP 9800 series desktop computers.

HP's Basic language operating system, meanwhile, allows users to execute up to 60 concurrent programs or tasks, the spokesman said.

At the heart of the HP 9000 series models is their memory/processor module, an enclosed card cage containing the five VLSI "superchips" — one each for the CPU, I/O processor, main storage, memory controller and 18-MHz clock.

Prices for the HP 9000s start at $28,250; deliveries of the single-CPU models will begin next March. Shipments of the double- and triple-CPU versions have yet to be announced by HP, based at 1501 Page Mill Road, Palo Alto, Calif. 94304.

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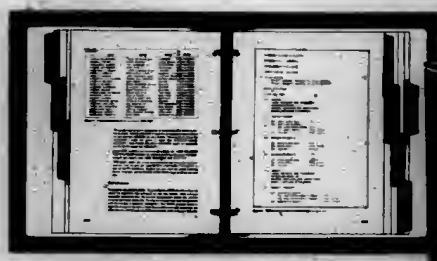

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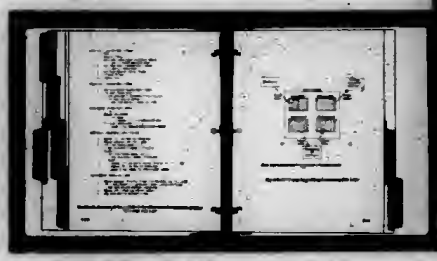

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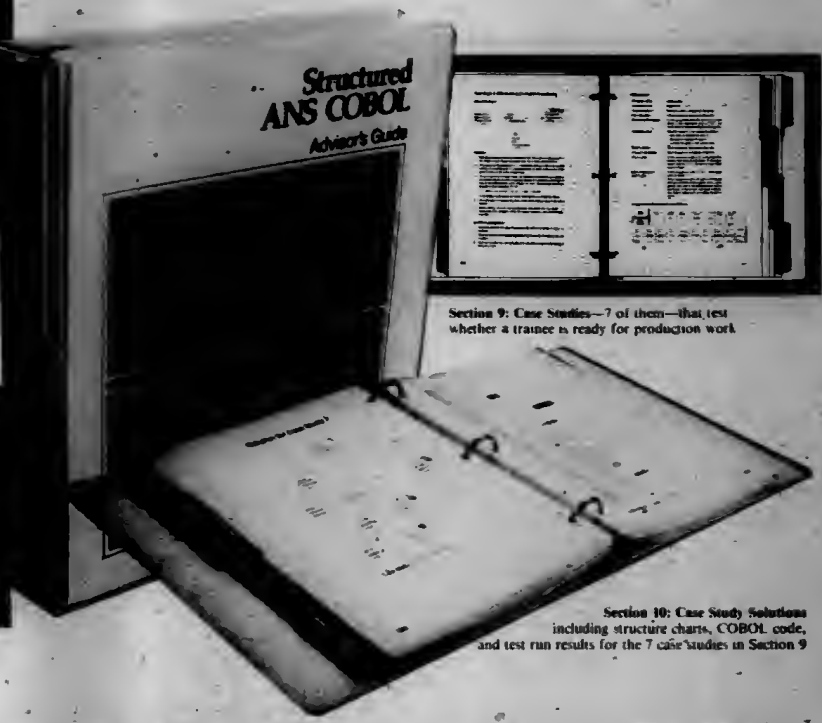

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Qantel Distributor Countersues User for Fraud

By Jeffry Beeler
CW West Coast Bureau

LOS ANGELES — A user that earlier this year sued a Qantel Corp. distributor for intentional misrepresentation and breach of contract now finds itself the target of a countersuit from the same vendor.

Calox, Inc. stands accused of fraud and breach of contract in a $1 million cross-complaint filed in Superior Court here by Metro-Comp, Inc., Qantel's exclusive distributor for Los Angeles and Ventura Counties.

Metro-Comp is accusing Calox, a supplier of durable medical equipment, of seeking to "hinder" the redesign of the user's general accounting and order-tracking/distribution software. Calox requested the program revisions in an effort to "force" Metro-Comp either to repurchase the user's Qantel Model 1400-based system or trim the configuration's price, the cross-complaint alleges.

Metro-Comp also accuses Calox of failing to pay some $2,600 worth of outstanding bills for the system.

As compensation for the injury it allegedly suffered as a result of the Calox account, Metro-Comp is seeking $1 million in punitive damages and an unspecified amount of compensatory damages. The distributor also demanded restitution for all the software and other materials it supplied to Calox as part of its attempted system installation.

Metro-Comp's complaint came in response to the suit filed against the distributor about two months earlier by Calox [CW, Oct. 25]. The original suit accuses the Santa Monica, Calif.-based distributor of failing to debug the first-time user's accounting and order-tracking system and failing to make it work according to specifications.

Shortcomings in the turnkey system's operation damaged Calox's business by preventing the local firm from collecting about $70,000 worth of revenues, the complaint alleges. Blame for the system's problems rests squarely with Metro-Comp's failure to supply the user with effective, custom-written application software, Calox Vice-President and Controller G.C. McAfee said during a recent interview.

However, Metro-Comp President Allen Weiss denied McAfee's charge. During a recent phone conversation, Weiss blamed the failure of Calox's system installation effort on the user organization's own internal problems.

At one point during the effort Calox apparently had second thoughts about its system and suspended all software development work for about 18 months, according to Metro-Comp's Weiss.

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Hal Converts Text to Speech At Radio Station

PITTSBURGH, Pa. — He sounds something like Lawrence Welk with a cold, he doesn't have a regular job and doesn't draw a paycheck. But here at radio station WDVE-FM, Hal is part of the family of disk jockeys.

You guessed it, Hal is a computer. Actually, he is a specialized speech recognition system that takes input text, applies a variety of grammar rules and converts the text to phonemes, the basic unit of speech.

The system is based on a text-to-speech conversion circuit board developed by Telesensory Speech Systems, Inc. Researchers at Carnegie-Mellon University (CMU) here attached the circuit board and a speaker to an Apple Computer, Inc. microcomputer to produce a system with a virtually unlimited vocabulary, according to CMU research scientist Ron Cole.

So far, Hal, named after the talking computer in *2001: A Space Odyssey* has made at least three radio appearances and has been used to broadcast the news, sports and weather.

Since it uses phonemes, Cole explained, the processor does not imitate human speech, rather it makes its own sounds, which are linked together to form words and sentences. By using some grammar rules, the unit can differentiate between various sounds. For example, Cole said the unit can distinguish the difference between the "th" sound in "other" and "outhouse." Furthermore, Hal has been programmed to pronounce the full versions of expressions, such as "et cetera" and "doctor," which typically are abbreviated in text, Cole said.

The Telesensory board is an outgrowth of a research project started about 10 years ago at MIT.

Asimov to Keynote HP 3000 Users Meet

LOS ALTOS, Calif. — Science fiction writer Dr. Isaac Asimov will deliver the keynote lecture on robotics and cybernetics at the Hewlett-Packard Co. 3000 International Users Group Conference (IUG) to be held in Montreal April 24-29.

"Systems Designed With Users in Mind" will be the conference theme.

Registration costs $400 and more information is available from Renaye Lee, Conference Manager, HP 3000 IUG, Suite 205, 289 S. San Antonio Road, Los Altos, Calif. 94022.

Private Intelligence Agency Inaugurates DP Center Showcasing Burroughs Tech

By Jake Kirchner
CW Washington Bureau

SPRINGFIELD, Va. — International Reporting Information Systems (Iris), the high-priced, low-profile intelligence agency for multinational corporations, inaugurated its supersophisticated DP center here last week.

Iris, which charges its corporate customers a minimum $100,000/year for daily, client-tailored analyses of worldwide social, political and economic events and trends, is a showcase of Burroughs Corp. technology. The $3 million worth of equipment at the Iris facility in this Washington, D.C., suburb includes two B7800 mainframes, one B5900 CPU and 6G bytes of on-line B235 disk storage.

Using a variety of telecommunications facilities, the Iris staff will transmit client reports via Burroughs B21 microcomputers to the recently introduced Burroughs 3/21 terminals, supplied to clients by Iris.

Announced with much fanfare on two continents a year ago [CW, Dec. 7], Iris boasts a headquarters staff of 200 systems and analysis specialists. Using press reports and submissions from approximately 100 correspondents throughout the world, the Iris system digests some 15,000 messages, totaling approximately 3 million words, every day in eight languages.

The specially designed Iris software directs relevant data to analysts who prepare reports based on the needs of individual clients. Instead of the usual keyword algorithm used in most data base access systems, the Iris system uses syntactical algorithms allowing 1,000 to 2,000 calculations per incoming message, according to Lee Feldman, Iris' executive vice-president for systems and services.

As impressive as the Iris system is, the company's fame is largely based on its advisory board, which includes international luminaries such as former World Bank President Robert McNamara, former UK Prime Minister Edward Heath and Jean-Francois Deniau, the former French minister of trade and commissioner of the European Community.

The operational staff has also drawn considerable attention. Iris President Barry Kelly is a former Central Intelligence Agency official, and Feldman, a former Defense Department systems consultant, recruited several computer experts from the U.S. defense and intelligence communities.

The Iris operating system and hardware configuration put together by Feldman and his staff are derived from recent government work, according to Feldman. But he said that contrary to some published reports, the Iris system is not superior to those used by the government. The limits of Iris' staff and budget do not allow the company to surpass federal intelligence agencies in systems sophistication, according to Kelly.

CW Photo by J. Gardner

Iris President Barry Kelly (left) and Vice-President Lee Feldman

Mumps Group Forms

WHITE PLAINS, N.Y. — Metropolitan New York users of the Mumps language have announced a local users group.

The group, which consists of banking, financial, health care, human resources, vendor and management personnel, will meet every six weeks in Manhattan.

More information is available from Don Ford or Stephen Koller at Malcolm Pirnie, Inc., Two Corporate Park Drive, P.O. Box 751, White Plains, N.Y. 10602.

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TRW

Group Training, Placing Handicapped in DP Jobs

By Marguerite Zientara
CW Staff

PLAINWELL, Mich. — A severe accident 16 years ago in which an IBM salesman was left paralyzed in all four limbs became the seed that grew into more than 20 IBM-initiated programs across the country to train the severely handicapped as programmers.

After recovery, the former salesman and IBM agreed that computer programming was a profession he could successfully enter despite his physical handicaps. That decision inspired a larger program to help many more people similarly disabled.

The Association of Rehabilitation Programs in Data Processing (ARPDP), formally established in 1978, began five years earlier with nonprofit training and placement groups set up by IBM across the country, funded through the federal Rehabilitation Service Administration.

Today, boasting an 80% successful placement rate, the ARPDP program depends on the cooperative efforts of rehabilitation agencies, training facilities, local business communities and qualified students, explained Bob Leneway, ARPDP national chairman and project director for the State Technical Institute and Rehabilitation Center here.

ARPDP students chosen for training in entry-level programming skills typically suffer from cerebral palsy, arthritis, stroke impairments, paraplegia and quadriplegia. Criteria for selection include a high school diploma, above average intelligence and reading and math skills at the 12th-grade level.

A volunteer business advisory group composed of DP professionals gives technical direction to each program and assists in recruiting and selecting students, Leneway said.

"Along the way, these business advisers act as guest lecturers, provide on-site visits to computer facilities, assist in preparing resumes and provide job-seeking guidance and practice interviews," Leneway added.

Students spend six to 12 months learning computer fundamentals and programming, in many cases through the multimedia courses offered by Deltak, Inc. of Oak Brook, Ill.

When ARPDP felt a strong need to expand its repertoire of programming languages from strictly Cobol to RPG, PL/1 and Basic in 1979, a California-based business adviser contacted the president of Deltak and made those needs known.

"His reaction was ideal," Leneway recalled. "He offered any of the 2,000 Deltak courses at cost to approved ARPDP members. It was a tremendous boost to our programs."

Another ARPDP program — and the first not associated with IBM — is Lift, Inc. in Chicago, a nonprofit contract programming firm that identifies, trains and hires physically disabled employees under contract to major corporations. Eventually these companies hire the programmers directly.

At Lift, Deltak training courses are even more integral to the program's success because the students are more severely handicapped than in other ARPDP programs, according to Lift President Charlie Schmidt.

Each student is homebound, unable to commute to an office or classroom. Programming skills are learned using videotape players, Deltak courses and remote terminals connected to a sponsoring company's computer.

The Lift training program consists of a six-month, self-administered audiovisual curriculum entitled, "Computer Programming for the Physically Disabled," designed around 75 Deltak courses.

"Every deal we strike with a business must rest on its economic merit for that company, not be just another humanitarian or philanthropic community contribution," Schmidt remarked.

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Service Aids Handicapped

SILVER SPRING, Md. — A Handicapped Educational Exchange (HEX) service is available for the price of a phone call to users with a 300 bit/sec Ascii or 60 word/min Baudot terminal.

Offered by the Amateur Radio Research and Development Corp. of McLean, Va., and supported by a federal grant from the Bureau of Education for the Handicapped, HEX was designed as a focal point for up-to-date information concerning education of and communications with the handicapped.

Messages entered into HEX can be related to: the handicapped, education or communications or microcomputer technology. Other messages will be periodically purged.

The Ascii terminal may be either a CRT or a printer equipped with a Bell Laboratories 103 or 113 originate modem.

The standard Baudot teletypewriter terminal uses a Weltbrecht modem.

More information about the service can be obtained from HEX, 11523 Charlton Drive, Silver Spring, Md. 20902.

Micro-Based System Lets Paralyzed Walk

By Jim Bartimo
CW Staff

DAYTON, Ohio — When Gene Leber reached across the dashboard of his car to shut off his radio, he had no idea that the police officer would think he was going for a gun. The officer, who had mistaken Leber's car for that of a suicidal driver he was pursuing, drew a .357 Magnum and, slipping on a patch of ice, fired a bullet into Leber's spinal cord.

Doctors told Leber that his legs would never again be useful. But when paraplegic Nan Davis recently walked with the aid of computer-generated electrical impulses, Leber's future began to look considerably brighter.

Davis' much heralded walk was made possible through microprocessor technology, an Apple Computer, Inc. Apple II+ and a 37-foot-long program of machine code at Wright State University here. The software program is written on the Apple and later applied to microprocessors from Intel Corp. and Zilog, Inc. in configurations created by Dr. Jerrold Petrofsky, who heads the research project aimed at helping 11 quadraplegics and two paraplegics exercise their legs, ride an adult-sized tricycle and, finally, walk.

Wide World Photo

Nan Davis, a paraplegic since an auto accident on her high school graduation night four years ago, takes the first of five steps she made during a recent demonstration of the micro-controlled movement system at Wright State University.

The software program reacts to sensory messages from electrodes attached to the ankles, knees, hips and toes. It then sends out electrical impulses to contract the muscles and create a walking motion.

The process is based on a "feedback system" that currently allows the subject to sit up and take six steps, explained Harry Heaton, who works for Petrofsky, head of Wright's biomedical engineering laboratories. Long-term goals of the project are to miniaturize the hardware and software enough to make it portable or implantable into the subject's body.

If successful, the system will allow subjects to activate the program instinctively through body movements rather than manually, as it is currently done, Heaton said.

A subject begins on an exercise chair that is hooked to the Apple, allowing the subjects to build up their atrophied leg muscles. He next takes a series of rides on a stationary bicycle while hooked up to a microprocessor running the same type of feedback program.

Finally, the subject is strapped into a parachute harness and attempts to walk through a set of supporting parallel bars. This final system is also based on a home-grown microprocessor configuration.

Davis, who was paralyzed more than four years ago in a car crash, completed all three phases of the program in about six months. Leber is scheduled to take his first steps this week.

"I started in June and was on the exercise chair for three months," Leber said. "The chair is a muscle builder. I can't tell you how much my legs have come back. They're like they were before the accident."

Because Leber, a Wright State junior in health care administration, has no sensation in his legs, the computer-generated electrical impulses are not uncomfortable.

"If everything goes right, I see myself walking in two years. Maybe not with an implanted system; it may be a portable system," Leber said.

Petrofsky, who has a Ph.D. in physiology and a degree in computer engineering, has been doing his research with animals for some 13 years and began work on humans only last May. Funding for the research has come from the Spinal Cord Society and the American Paralysis Association, but officials of Wright State expect funding to increase dramatically because Davis' first steps have received nationwide media attention.

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The Northeast Computer Show drew 10,000 more attendees than expected.

CW Photos by S. Blakeney

Vendors used eye-catching methods to attract exhibition visitors.

Show Attendance Tops Sponsors' Expectations

By Susan Blakeney
CW Staff

BOSTON — Attendance topped sponsors' expectations by more than 10,000 last week when the Northeast Computer Show drew 55,264 conference-goers at the Hynes Auditorium here.

Small business owners, home computer buffs, people looking for jobs with computer companies, school children, bargain hunters, a few Fortune 500 types and many families crowded the three floors of the show, taking in the 500-plus exhibitors' home and office wares showcased at the event. Among the vendors exhibiting at the show were Digital Equipment Corp., Data General Corp., Datapoint Corp. and RCA, all of which reported much attendee interest in their smaller product offerings such as word processing systems, small business systems and desktop micros.

"I can count the number of people on one hand who asked about the VAX system," said Don Hunt, a DEC sales representative. On the other hand, DEC's Digital Research, Inc. CP/M-based Rainbow 100 microcomputer, the Decmate II and the Professional 300 series enjoyed lots of attention, Hunt reported.

Rod Taft, commercial sales representative with DG, echoed Hunt's observations. "This is very close to the retail level ... there's a lot of small businessmen here looking for their first system." Many people at the show expressed interest in DG's MPT/100 desktop graphics unit, but its office products line was not as popular.

Both Hunt and Taft agreed more personal computer enthusiasts and hobbyists were at the show than business system-oriented people, but Hunt noted that "people are asking more intelligent questions this year ... The shoppers are becoming sharper — more technical. They're comparison shopping."

And, Taft added, "They know more buzzwords this year."

Scott Kennedy, who is with RCA's Marketing Microcomputer Products Group, said "The people here are younger and more knowledgeable than ever. The computer awareness of people here is definitely going up."

The crowd on the floor seemed to confirm these observations. Bob Maher of Honeywell, Inc.'s automated litigation support group and Catherine Chambers, an editor at Wang Laboratories, Inc., were window-shopping for a personal computer that would enable them to work at home and possibly start their own business.

Ann Olsen, a school teacher from North Adams, Mass., was looking to augment her home Radio Shack TRS-80 micro with some new software. Rob Wilhelm, an area student who owns a Sinclair Research, Ltd.'s small Sinclair system, came to the show because he wanted more computer power.

Many of the attendees, anticipating that prices would continue to drop, expressed hesitance about buying products at this year's show. "Look at how many more computers are under $300 at this year's show," Wilhelm commented. "I'm waiting for more prices to drop and capabilities to climb."

Others at the show were more than ready to buy. "I've seen lots of deals being made today," Wilhelm remarked.

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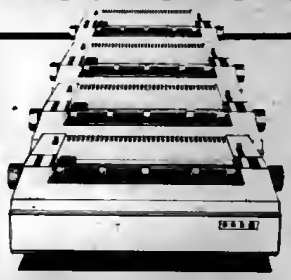

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Terminals and Printers

Fourth-Generation Tools Get Mixed Reviews

By Robert Batt
CW West Coast Bureau

LOS ANGELES — Fourth-generation languages are playing an integral part in the development of the information center concept, but they have certain drawbacks and are meeting with some resistance from data processing professionals.

That is the consensus of DP specialists here who have added nonprocedural languages to their structured programming skills and involved the end user in decision support systems through an information center environment.

At Collins Foods International, Inc., for example, the financial controller is using the fourth-generation language Focus from Information Builders, Inc. for financial analysis of operating units. Without the language, company officials claim, senior managers could not have done the analysis.

At Continental Airlines, Inc., the vice-president of operations has used Focus to design his own data base, write his own reports and function as a decison support tool.

Prolific Use

"The use of Focus at our senior management level has been prolific, although we have only had it in-house since March. So far we have only begun to touch the surface of possible applications," observed Joe Cassidy, senior programmer analyst at Continental.

MIS departments often use fourth-generation languages to cut down on their work load by giving a greater amount of computing power to the end user. At Security Pacific Bank, the information center environment consists of dedicated computing facilities offering Ramis II, a fourth-generation language from Mathematica Products Group, Inc., for management information reporting and the Evaluation and Planning System (EPS), a financial modeling package from EPS, Inc. written in an English-type language.

"The relative inflexibility of batch production systems led to a growing backlog of user requests for ad hoc reporting capabilities by end users," recalled Norman Leibson, vice-president of information services at Security Pacific."We have been using Ramis primarily as a tool for end users to do their own development."

At Denny's, Inc., nonstructured languages give users the infofmation they need to have on a daily basis and help them develop small, self-contained systems that do not require the full spectrum of data processing expertise.

"Focus, in particular, provides a vehicle for functions to be brought on-line without the traditional heavy involvement of the MIS department," explained Kent Taylor, a systems analyst at Denny's.

Despite these endorsements, fourth-generation languages do face difficulties. One of the problems still to be resolved in some cases is the lack of more complete interfaces between structured languages such as Cobol, effective for large-volume transaction programming and fourth-generation languages designed for on-line, user-menu type applications that can be changed with short notice.

"Host language interface capabilities where traditional languages draw from fourth-generation data bases have not yet been developed," Taylor noted. He said the biggest disadvantage of a language like Focus is that user expectations far exceed the language's capabilitites.

"Focus is only relatively user-friendly. It doesn't teach the end user how to understand the data base structure or the intricacies of processing on a computer," Taylor said, adding, "Training is also a problem."

A similar complaint was voiced by Ramis II users. "We have found the reporting aspects of Ramis to be very user-friendly, but as far as the building and maintaining of the data base is concerned, it is still done best by traditional DP people because it is fairly complex," Leibson said.

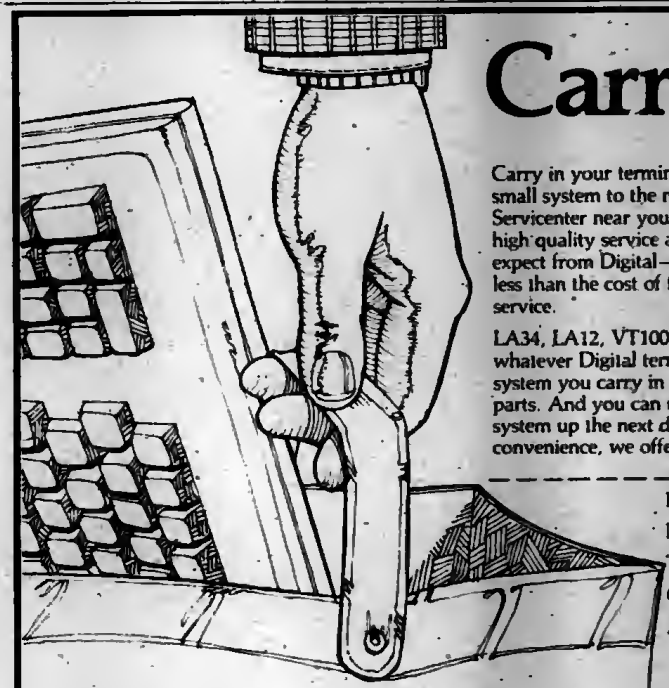
To help users build and manage data bases, Security Pacific is using a package known as Interactive Screen Management Display System (ISMDS) manufactured by JFR and Associates of Los Angeles. According to Leibson, ISMDS gives users of IBM 3270 CRT terminals the ability to enter data in a friendly way without involving the Ramis II record management procedures.

Acceptance a Slow Process

LOS ANGELES — Within the DP shop itself, fostering the use of fourth-generation languages seems to be a slow educational process.

At some companies, nonprocedural languages are widely used by programmers and analysts. At Denny's, Inc., for example, Focus from Information Builders, Inc. is helping to clear project backlogs by complementing existing application packages in cases where a package is not yet fully adaptable to the kind of Intracompany reporting that is required.

At other locations, however, DP personnel are still suspicious. "As far as being an integral part of DP services is concerned, Focus has not been accepted internally as well as our users might have expected. Resistance by our DP people is being overcome slowly, and the heavy support of senior managers is helping in this," said Bob Dabrowski, information center manager at Continental Airlines.



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Don't Let Users Buy Own Micros, DPers Told

By Bob Johnson
CW New York Bureau

NEW YORK — "Users do not make good purchasing decisions when buying personal computers for their organizations. They are usually attracted to the 'whiz-bang' features and often wind up with systems they cannot use."

That is what Dr. Edward H. Currie, vice-president and chief executive officer of Lifeboat Associates, a vendor of microcomputer software, told DP professionals attending a recent conference here entitled "The Personal Computer Decision '82."

Sponsored by Women in Data Processing, Inc., the conference focused on helping DPers make the right decision when choosing personal computers for integration into their existing DP operation.

Currie's approach to this problem emphasized "complete" systems and the way software should be perceived in the selection process. In his talk on "The State of the Art and New Trends in Software Technology," Currie explained that users become confused because their main concern is what type of hardware to buy.

This is not surprising, Currie indicated, because the computer industry is hardware-driven and most of its progress tends to be measured by what new capabilities a machine has and how fast it can process, without regard to software.

According to Currie, this attitude trickles down to would-be personal computer users who try to get the newest and fastest machine in hopes that it will solve their problems.

"People react to systems visually and tactilely. They don't think about the system, they think about what problems they have to solve with it," he said.

Every time a technological improvement happens, users are sent into a frenzied state, rushing to get the personal computer with the newest features. "The industry continues to throw out red herrings," Currie said. "The problem is that the people who produce these systems don't use them."

As an example, Currie pointed to the introduction of IBM's Personal Computer. The IBM Personal Computer "legitimatized" the personal computer industry, especially 16-bit products and caused a great deal of interest, Currie said. But, he added, users became aware that the software they needed was not available for the 16-bit machine.

"With the average two-year revolution in hardware comes perverse occurrences as well. The 'softcard' for the IBM Personal Computer, produced to fill its software gaps by allowing it to run 8-bit software, when combined with the machine, makes it the world's most expensive terminal," he stated.

Keep Tasks in Mind

Currie advised attendees not to jump at hardware simply because it represents the latest development, but to approach personal computer selection with the tasks they need done in mind. He suggested that "rethinking" be done before system selection and offered some ways to protect from being caught up in the hardware improvement rush.

"Users have to look beyond just what is available in hardware and understand the ramifications of the new system beyond the original problem solving. The best way to protect yourself is to react slowly to new hardware introductions and don't ever get too sophisticated," Currie said.

He added that users are better off not knowing much about technology because it will be less confusing to select a system if they are not confused with numerous technical terms and specifications.

Software technology is "standing still or regressing" in comparison to hardware, Currie said. He predicted that the greatest selection of software in the next two to five years will be for 8-bit personal computers. He said that it will take at least that long before an extensive library of 16-bit software will be available.

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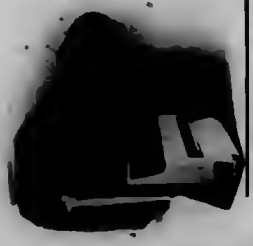

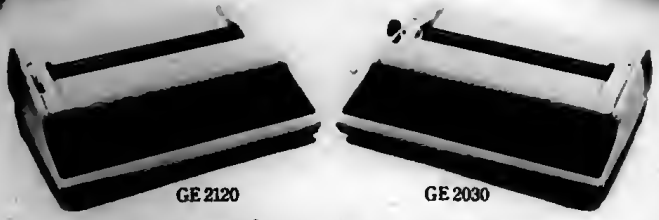

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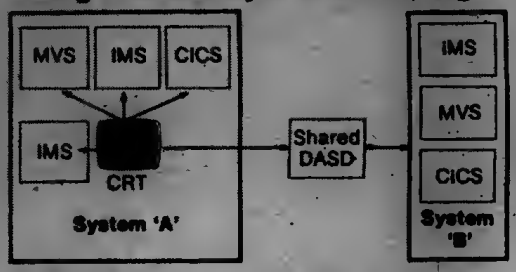

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Stormy Auditor-DP Relation Said Unnecessary

CW Photos by J. Barbera

'It was hard to justify a $7.2 million system,' New England Electric's Francis St. Clair recalled. 'We had to spread it over eight years.'

By Jim Bartimo
CW Staff

WALTHAM, Mass. — The relationship between auditors and the systems planner need not be a stormy one, the manager of internal audits and the manager of systems planning for New England Electric System told a recent meeting of the New England EDP Auditors Association, Inc.

Auditor Thomas P. McManus and Francis W. St. Clair, a DP professional, spoke about the trials and tribulations of installing a $7.2 million system over a three-year period. Once considered the leader in customer service and billing, New England Electric fell behind current technology in the '70s by staying with IBM's second-generation computers and IMS batch processing, St. Clair said.

'Management said they wanted just three things from the new system. They wanted it to be perfect, on time and under budget.'

Customer complaints and billing errors forced the auditing and DP departments to perform a feasibility study on a system upgrade for the two applications. To service 20 offices in three states, it was recommended that the utility begin development of an IBM IMS on-line data base management system in the late '70s running the Customer Information Control System.

"Management said it wanted just three things from the new system," St. Clair said. "They wanted it to be perfect, on time and under budget." To reach these goals, McManus reported directly to the chief executive officer and to the board of director's audit committee.

Senior management's major concerns were a loss of data in the transition process and cost justification of the system as a whole. They had reason to be nervous — another utility recently had to write off $2 million in billing information. "It was hard to justify a $7.2 million system," St. Clair said. "We had to spread it over eight years."

Outside auditors 'were brought in before implementation,' Thomas McManus noted. 'We didn't want them to come in when it was over and critique it. If you invite auditors in early, they feel involved.'

Providing the auditing department with the information it needed was a key factor in the project's success. "I needed to understand the system," McManus said. "I wanted to know how it was going to be updated and how transactions were going to be processed." A feasibility study, reported on control points, operating costs, history of implementation and operating efficiency, McManus said.

McManus was involved with outside auditors, Coopers and Lybrand, at the outset. "They were brought in before implementation," McManus said. "We didn't want them to come in when it was over and critique it. If you invite auditors in early, they feel involved."

Subsystems such as security were also developed and monitored jointly. "We set up an elaborate system [using passwords] to protect the terminals," St. Clair said.

A major problem of the old system that McManus hoped to avoid was shoddy documentation. "The documentation looked like a mirror image of the code," he said. "All I asked is that the programmers give some idea of what sections of the program were meant to do, so that six months or six years later, someone could look at it and know what it's supposed to do."

Before the system went live last July, it was parallel tested with a 40,000-customer sample of a typical processing day.

After 3½ years and two man-years of work, the IBM 370/168 with 10 3350 disk drives is up and working 98% of the time, servicing one million customers. A postimplementation study showed minor adjustments that needed to be made.

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At Communication Networks, 88 out of every 100 people in the exhibit audience have specific communications buying influence, according to Exhibit Surveys Inc., and they average nearly half an hour with each exhibitor.

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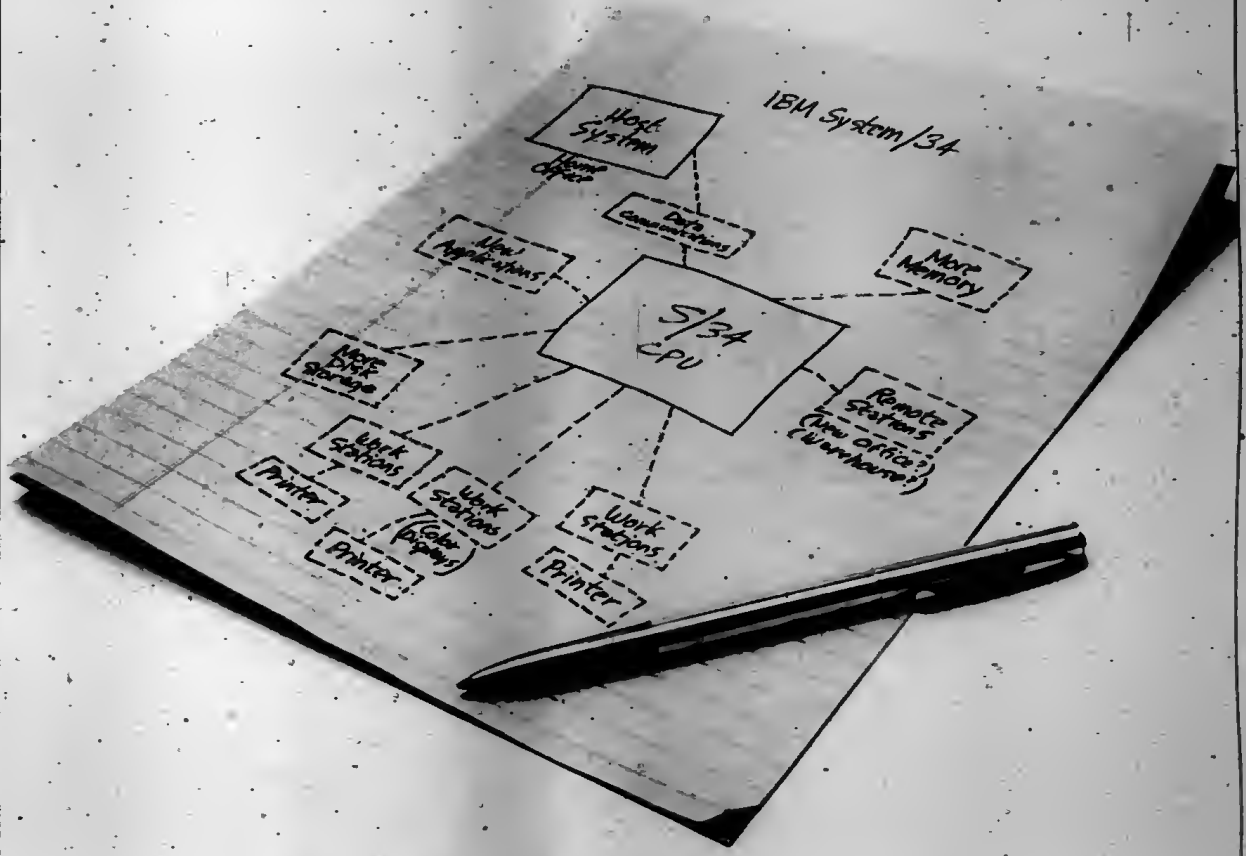

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Attendees Find Security Meet Topics Valuable

By Bob Johnson
CW New York Bureau

NEW YORK — Topics ran the gamut from disaster recovery to computer crime at the ninth annual Computer Security Conference held here recently, and judging from their reactions to the seminars, talks and vendor exhibitions, attendees came to learn all they could at the three-day event.

Addressing such concerns as "Establishing a Computer Security Program" and "Computer-Related Crime," the conference sessions were well presented and informative, attendees said.

Ross E. Markley, data center manager for the Suburban Bank in Bethesda, Md., found the conference a valuable source of computer security information at one central gathering.

"Three or four years ago, our bank was looking for disaster recovery services, and we frankly had a hard time finding where they were. This type of conference has made it a lot easier," said Markley, who was attending the conference for the first time.

The DPer, who is also president of Bancon, a nonprofit disaster recovery group made up of 10 banks in the Washington, D.C., area [CW, Aug. 9], said he benefited most from hearing case histories of computer frauds and disasters.

"The known policies concerning computer security ... serve as a valuable method of information for security novices," Markley said. "However, the talks that focused on a company that burnt down and then recovered, for example, and the [Federal Bureau of Investigation] talk on computer crime gave me real hard comparative information that I found most valuable."

Sheila Parsons, a sales representative for the Canadian firm of Data Security Ltd., said that the sessions showed the computer security industry is maturing to the point where more companies are recognizing the risks they face. "It is evident in the industry and in the talks at the show that a number of companies are becoming scared stiff of their employees," Parson remarked. "They feel confident that they have the external security problems under control, but now it's a different story. Ten years ago you couldn't give our services away."

Joseph Paduano, a security administrator for Manufacturers Hanover Trust Co. in New York, "was especially pleased with the talk on the government's position on computers and national security."

Thomas P. Scattargia, a former operations manager who entered the security area just two weeks ago as DP data security manager at the Girard Bank in Philadelphia, said that the seminars were to the point and offered good basic material.

Dec. Seminars To Discuss Communications

ORANGE, Calif. — The Center for Advanced Professional Education, Inc. (Cape) is offering three-day seminars next month on "Data Communications Systems — A Practical Guide" and "Network Communications Protocols."

The first seminar is intended for those developing, using or evaluating a data communications system. It will cover carriers and regulations, media, network elements, modems and modulation, modes of operation, codes, interfaces, protocols, hardware and transmission integrity.

The seminar will be held Dec. 1-3 in Newport Beach, Calif.; Dec. 8-10 in Dallas; Dec. 15-17 in Hartford, Conn.; and Dec. 20-22 in Denver and Honolulu.

"Network Communications Protocols" will cover bit-oriented protocols, local-area networks, packet-switched networks and satellite communications. It will take place Dec. 1-3 in Albuquerque, N.M.; Dec. 8-10 in Pittsburgh, Pa.; Dec. 15-17 in Baltimore; and Dec. 20-22 in Minneapolis.

Each seminar costs $595. Cape is at 11928 N. Earlham, Orange, Calif. 92669.

Zilog's System

Record Crowds Test Security Aids at CSI Meet

By Bob Johnson
CW New York Bureau

NEW YORK — DP security professionals checked out computer security products ranging from paper shredders to sophisticated system software and crowded into seminars at the Ninth Annual National Computer Security Conference held here earlier this month.

Sponsored by the Computer Security Institute (CSI) of Northborough, Mass., the conference drew nearly 750 attendees. CSI officials tied the record attendance to growing concern about security within the computer industry.

No new products debuted during the show. However, one CSI official pointed out that the computer security field is relatively young, so there is a constant influx of new DP professionals who have not yet seen the "old" products.

But Dave McIndoe, director of marketing services for CGA Software Products Group of Marlboro, N.J., was pleased with the caliber of people who showed interest in his firm's product.

"People coming by our booth are not only showing a real interest and knowledge about security measures as applied to computers, but they are able to carry on fairly technical conversations about the products with our technical staff. This shows that the level of sophistication in this field is very high," McIndoe said.

Software security products were especially popular, judging by the traffic at software vendor's booths and the attendance at a session offering a comparison of available software products that drew high attendance, McIndoe said.

But physical security is still an important consideration, noted Andy Goldstone, sales manager for Racal-Vikonics, Inc., an access control systems manufacturer. Most inquiries at his booth were from DP people "doing the legwork for their security people," he said.

Security administrators do not know enough about computers to attend these types of shows and make the right decisions about the type of equipment to buy, Goldstone said. Therefore, the usual scenario is for the DP specialist to attend the show and report back to the security administrator.

"It's OK that the DP person coordinates the acquisition of the products, but the security person has to live with it: Either the security professional needs to learn more about computers or the DPer about security," he noted.

Contingency planning and disaster recovery service companies also drew attention here. But security professionals look at disaster recovery and contingency planning as one of those things they do not like to think about, according to one vendor who wished to remain anonymous.

"In many ways, our business is analogous to the funeral and cemetery business. Disasters happen, and just like dying, it's best to be prepared so everything can go on when the worst is over," he said.

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Software Meet Set for Jan. 12

WASHINGTON, D.C. — The 1983 Federal Software Conference, which will focus on "Managing Application Development in the Small Computer Era," has been scheduled for Jan. 12-14 at the Shoreham Hotel here.

Both current issues and future technology trends will be addressed by government and private-sector representatives at the conference, which is being sponsored by the Public Management Institute of George Mason University.

Keynoting the meeting will be Dr. Ruth Davis, chairwoman of the National Research Council Study of Federal Computer Policies.

The registration fee for the conference is $450 for government employees and $500 for industry representatives. Further information can be obtained from the Conference Manager, U.S. Professional Development Institute, 12611 Davan Drive, Silver Spring, Md. 20904.

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Exec Sees Law Firms Embracing DP Technology Within 10 Years

By Susan Blakeney
CW Staff

ROCKVILLE, Md. — The wheels of justice are taking some new turns of late, and lawyers might do well to brush up on some DP skills.

"Within the next 10 years, law firms will be equipped with automated facilities for in-house litigation support as well as legal research, and even the smallest firms will have computerized office management aystems," predicted Jeff Emerson, vice-president and general manager of the Litigation Management Support Division of Informatics, Inc.

"The distinctions between the various types of automated services available to the legal profession will become increasingly blurred," Emerson continued, "and major changes in the delivery of these services will permit the handling of all information needs — word processing, data processing, information management — on one integrated system."

The major shift in legal support will be from time-shared services to in-house turnkey systems, made possible by declining costs and increasing capabilities of computers along with the continued development of more software, Emerson asserted.

"Law firms will find it cost-effective to automate cases involving as few as 1,000 documents on their own computers, and the creation of data bases will be facilitated by word processing machines which capture information at the source in machine-readable form," he said.

Emerson said that several big law firms in New York already have CRT terminals on each attorney's desk. He also said that the office manager or administrative director in these law firms was the person in charge of system selection.

Unrestricted Data Bases

In the area of computer-assisted research, Emerson projected that time-shared legal data bases such as West Law and Mead Data Control's Lexis will become unrestricted and more user-friendly, accessible through common terminals and languages.

Another trend he cited was the computerization of private files enabling law firms to make better use of already-created documents. Emerson maintained that these systems will initially be available via time-sharing and eventually through word processing systems connected to a computer in the law firm.

The fastest growth area in computerized legal systems is law office management, where word processing and computers offer big opportunities for productivity gains as well as profitability, Emerson said. "These benefits will extend all the way down to the smallest law firma, providing better management control as well as speeding the creation of briefs, memoranda, legal forms and correspondence," he noted. These systems will also handle accounting, invoicing, financial management, calendar/docket control as well as litigation support, Emerson concluded.

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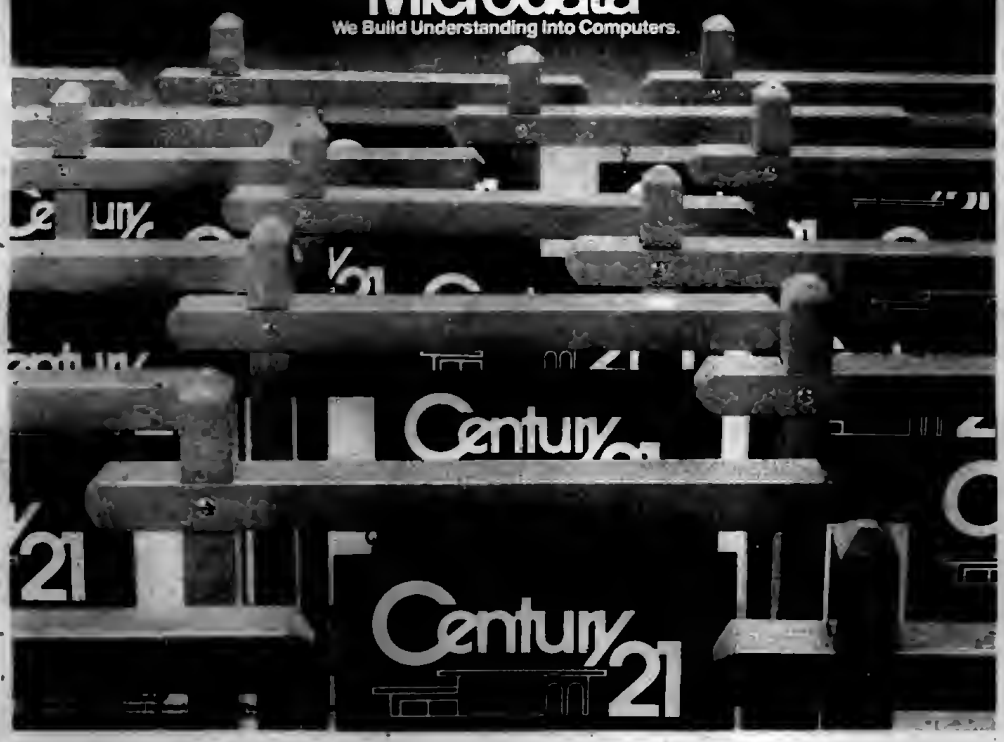

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[1]Documentation available from Triangle Software Company

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Managers on the Move

JOHN G. STENGEL has been appointed director of computer services for Burroughs Wellcome Co., a developer and manufacturer of pharmaceutical products for human and animal use, which is headquartered in Research Triangle Park, N.C. He will be responsible for the DP operations at the company's headquarters and at its Greenville manufacturing division.

Stengel comes to the company from Texasgulf, Inc., where as assistant controller he was responsible for corporate computer services.

He holds a B.S. degree in accounting from King's College in Wilkes-Barre, Pa.

•••

WILLIAM W. KENNEY has been named division vice-president of coordinated computer services at Internorth, Inc., an energy-based corporation in Omaha, Neb. Kenney will be responsible for coordinating computer services within the company.

Since joining the corporation in 1961, he has held various positions, including vice-president and general manager of Hydrocarbon Transportation, Inc., senior vice-president of the International Division of Northern Liquid Fuels Co. and his current post, executive vice-president of Internorth International.

Kenney holds a B.S. degree in business administration from the University of Nebraska at Lincoln and has completed the Ohio State University Executive Development Program.

•••

JOHN R. COSTELLO has been appointed a director of DP auditing at Associates Corp. of North America, a financial service organization in Dallas.

Costello joined the corporation in 1980 as auditor and most recently served as senior auditor.

He attends Indiana University in South Bend, Ind.

DALE P. TERRELL has been promoted to first vice-president for Security Pacific National Bank's Telecommunications and Information Services Department in Los Angeles.

Terrell, who joined Security Pacific in August 1981, is administrator of the Coporate Systems Division.

He earned a B.S. degree in mathematics from Albion College in Michigan.

John G. Stengel

Cmas May Get Users Group

TOMS RIVER, N.J. — Sambol Construction Corp. would like to establish a national users group for companies using the IBM Construction Management Accounting System (Cmas).

A Sambol spokesman said the creation of such a group would provide a forum for the exchange of ideas and information on Cmas.

More information is available from Robert Houlihan at Sambol Construction Corp., 1033 N. Maple Ave., Toms River, N.J. 08753.

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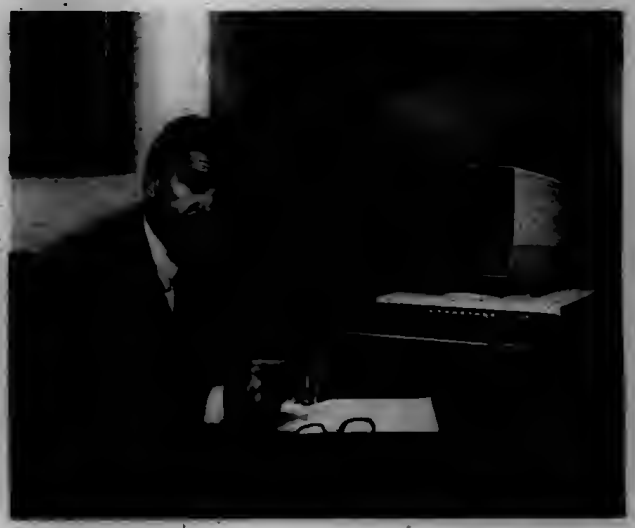

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ACR Seeking Panelists

SCOTTSDALE, Ariz. — Applied Computer Research, Inc. (ACR) is looking for panelists to participate in its fourth annual Conference on EDP Performance Management, slated to take place here Feb. 28-March 4.

The subject of the conference is "Future Considerations for Capacity Planning." The conference will address the impact on capacity management of such technological innovations as information centers, distributed processing, personal computing, user-friendly languages and computer-literate workers.

Panelists will be asked to make opening remarks stating their position on one or more of the above topics. The remainder of the session will be devoted to audience/panel discussion. Potential panelists are invited to contact ACR through P.O. Box 9280, Phoenix, Ariz. 85068.

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Courses Out For Training DP Managers

NAPERVILLE, Ill. — Deltak, Inc. has introduced three videotape-format training courses for executives and DP managers.

"The Data Dictionary System" consists of two courses that provide basic data dictionary concepts and suggests strategies and considerations for acquiring and using these resources. The courses cover data dictionary components, passive and active dictionary functions, dictionary use in application and design and technical and administrative factors.

"The Strategic Impact of Information Technology" is intended for corporate managers wanting to increase their understanding of the business value of information technology.

The three-course series reviews significant trends in the business environment and the strategies they imply; details a study of managerial and professional productivity and the potential benefits of office automation and discusses problems and implications of information technology from a top management viewpoint.

"Universal Word Processing Operations: The Basic Skills" employs audio cassettes, videotapes, activity guides and operations manuals to assist in training for the automated office. The seven-course series includes basic word processing concepts and familiarizes students with the logic governing word processing systems. Rental fees are $50 to $125/course from Deltak at East/West Technological Center, 1751 W. Diehl Road, Naperville, Ill. 60566.

Monthly to Cover DP Auditing

NEW YORK — Van Nostrand Reinhold Co., Inc. will begin publishing a monthly newsletter in January to provide analysis and coverage of DP auditing.

The "Data Processing Auditing Report" will survey current events, interpret data, evaluate new products and review materials and publications, a spokesman said. The report will also look at such issues as how untraceable entries and deletions occur and where breaches of security are most likely to take place.

A subscription to the eight-page newsletter costs $96/year from Willis Walker, Professional Journals and Periodicals Division, Van Nostrand Reinhold Co., 135 W. 50th St., New York, N.Y. 10020.

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Can Service Requests Be Controlled?

Q Although the division director sets it at 50%, a more realistic assessment of our maintenance effort is 80% and growing. I would say that half the service requests we receive are not worth a tenth of the effort with which we respond. Any ideas on how to better control these requests?

A Is there an effective standardized procedure for submitting service requests? Is the end user responsible for completing the service request? Do you have a charge-back system that realistically reflects the cost of the service? Are project priority criteria documented and followed? Are requests for service assigned a priority with respect to corporate objectives?

Is quality emphasized during systems development? Do you periodically review existing systems to identify proactively system inefficiencies and needs? Does management information systems management know how many resources are devoted to maintenance? Are users aware of the impact of their requests?

You should have responded "yes" to each of the above questions. A company's commitment to the maintenance effort is directly proportional to the number of "no" answers.

The obvious solution is to do whatever it takes to make sure you answer "yes" to as many of these questions as possible.

Q I am currently working with an IBM System/34 and am becoming quite concerned about my career path.

IBM is already installing System/38s. These will eventually make the System/34 obsolete, along with the need for experienced System/34 people. What are DP professionals to do in order to keep up with the ever-changing computer technology?

A First of all, the IBM System/34 is the most popular small business computer system in the world. The System/34 and your marketability will not just fade away overnight.

How to keep up with technology? In a word — education. Education comes in a myriad of forms. However, it is an individual activity and requires an individual commitment. It takes a concerted effort to assimilate and use learned material.

With respect to your immediate situation, you might familiarize yourself with RPG-IH, RPG-II/RPG-III translators and the System/38 data management capabilities. If you haven't already heard, an upgrade from a System/34 to a System/38 is no piece of cake.

Q My job title is Installations and Training Specialist. However, my job responsibilities are much more than that. They include design and implementation of user training programs, user documentation of all systems and acting as liaison between the users and the programmer/analysts.

With the diversified duties I perform, what would be the best job title to describe my function? Is this type of position in demand in the DP field?

If I want to stay involved in the user end of the DP field, should I be taking courses in programming?

A You are currently the user education coordinator, user documentarian and user liaison (and probably deserve a raise). The title most representative of combined functions is the latter.

The user liaison function is critical to the success of any DP department. However, the scope of the function varies considerably from one company to the next. User liaison positions usually evolve internally. Companies seldom recruit externally to fill these slots.

I'm a firm believer that a knowledge of programming is helpful, though not essential, in all DP-related positions.

Q Outside of the invention of the computer, what event do you think had the greatest impact on the computer industry?

A My nomination would be IBM's announcement of their upwardly compatible 360 series on April 7, 1964. The 360 series not only turned the computer industry around, it changed the way we do business. I wouldn't be surprised to see this event overshadowed by an even more significant event within five years.

Long, president of Long and Associates, is a consultant, lecturer and author in the field of information services. If you have a question you'd like him to address, send it to Larry Long, Editorial Department, Computerworld, P.O. Box 880, Framingham, Mass. 01701.

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Calendar

Week of Nov. 29

Dec. 1, Waltham, Mass. — **Perkin-Elmer Thanksgiving Open House and Seminar on Minicomputers and Applications.** Contact: Perkin-Elmer Corp., 214 Third Ave., Waltham, Mass. 02154.

Dec. 1-3, Chicago — **Computer Performance Measurement and Capacity Planning: Tools and Techniques.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 1-3, Chicago — **Advanced DP Management: Methods and Techniques in the '80s.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 1-3, Chicago — **Basic: An Introduction to Computer Programming for Managers.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 1-3, San Francisco — **Managing and Motivating Information Processing Professionals.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 1-3, Washington, D.C. — **Effective Writing Skills for Information Processing Professionals.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 2, Columbia, Md. — **Introduction to Visicalc.** Contact: Center for Management Development, College of Business and Management, University of Maryland, College Park, Md. 20742.

Dec. 2, Newton, Mass. — **Birth of a Women's Network.** Contact: Rona Hamada, Input, 58 Andrew St., Newton, Mass. 02161.

Dec. 2-3, Phoenix — **Local Network Equipment: Developments and New Offerings.** Contact: Architecture Technology Corp., P.O. Box 24344, Minneapolis, Minn. 55424.

Dec. 2-3, North Brunswick, N.J. — **Effective DP Auditing.** Contact: EDP Audit Associates, P.O. Box 1045, Denville, N.J. 07834.

Dec. 2-3, Atlanta — **Performance Analysis Concepts and Tools VAX/VMS Systems.** Contact: Raxco, Inc., 6520 Powers Ferry Road, Atlanta, Ga. 30339.

Week of Dec. 6

Dec. 6-7, New Orleans — **Software Configuration Management.** Contact: Education Foundation of Data Processing Management Association, P.O. Box 91295, 5959 W. Century Blvd., Los Angeles, Calif. 90009.

Dec. 6-7, Boulder, Colo. — **Device-Independent Graphics.** Contact: Kathy Anderson, Precision Visuals, 6260 Lookout Road, Boulder, Colo. 80302.

Dec. 6-7, Washington, D.C. — **Data Administration: Successful Techniques.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 6-8, New York — **American Bell's Advanced Information Systems.** Contact: Technology Transfer Institute, 741 10th St., Santa Monica, Calif. 90402.

Dec. 6-8, Chicago — **DP Disaster Recovery Seminar.** Contact: EDP Security, 181 West St., Waltham, Mass. 02154.

Dec. 6-8, Dallas — **Facilities for Auditing IBM's DOS/VS Operating Systems.** Contact: MIS Training Institute, Inc., 4 Brewster Road, Framingham, Mass. 01701.

Dec. 6-8, Dallas — **Auditing & Security Concepts for IBM's MVS Operating Systems.** Contact: MIS Training Institute, Inc., 4 Brewster Road, Framingham, Mass. 01701.

Dec. 6-8, Dallas — **Auditing & Control Concepts for IMS.** Contact: MIS Training Institute, Inc., 4 Brewster Road, Framingham, Mass. 01701.

Dec. 6-8, Washington, D.C. — **Designing Effective Data Bases.** Contact: Center for Management Development, College of Business and Management, University of Maryland, College Park, Md. 20742.

Dec. 6-8, New York — **American Bell's Advanced Information Systems Net 1000 Service.** Contact: Technology Transfer Institute, 741 10th St., Santa Monica, Calif. 90402.

Dec. 6-8, Los Angeles — **Automated Office VI.** Contact: National Institute for

Calendar

Management Research, P.O. Box 3727, Santa Monica, Calif. 90403.

Dec. 6-8, Washington, D.C. — **Computer Graphics.** Contact: U.S. Professional Development Institute, 12611 Davan Drive, Silver Spring, Md. 20904.

Dec. 6-8, Boulder, Colo. — **International Tele/Conferencing Symposium.** Contact: Cross Information Co., Suite B, 934 Pearl, Boulder, Colo. 80302.

Dec. 6-8, Summit, N.J. — **IMS DL/1.** Contact: Chubb Advanced Training Center, 480 Morris Ave., Summit, N.J. 07901.

Dec. 6-8, Washington, D.C. — **Second Annual Conference on Computer Graphics: Delivering the Promised Productivity.** Contact: U.S. Professional Development Institute, 12611 Davan Drive, Silver Spring, Md. 20904.

Dec. 6-8, New York — **Structured Testing Tools and Techniques.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 6-8, New York — **Data Processing: Fundamental Concepts.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

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Dec. 6-8, Washington, D.C. — **Structured Systems: Analysis, Design and Programming.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 6-8, Washington, D.C. — **Data Security: Implementation and Management.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 6-8, Washington, D.C. — **Integrating Office Automation and DP Systems: Effective Practice.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 6-8, Los Angeles — **Systems Analysis and Design: Concepts and Effective Practice.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 6-8, Los Angeles — **Using Computer Graphics: Techniques, Systems and Applications.** Contact: Seminar Department, Datapro Research Corp., 1805 Underwood Blvd., Delran, N.J. 08075.

Dec. 6-9, Chicago — **Computers in Science.** Contact: Edward Ruffing, Scherago Associates, Inc., 1515 Broadway, New York, N.Y. 10036.

Dec. 6-10, New York — **CICS Command Level Programming.** Contact: Advanced Training Center, 480 Morris Ave., Summit, N.J. 07901.

Dec. 6-10, Boston — **Hands-On Programming Workshop.** Contact: Institute for Advanced Professional Studies, 55 Wheeler St., Cambridge, Mass. 02138.

Dec. 6-10, Orlando, Fla. — **How to Prevent, Detect and Investigate Computer Fraud.** Contact: International Association of Chiefs of Police, Thirteen Firstfield Road, Gaithersburg, Md. 20878.

Dec. 6-10, Los Angeles — **Project Management for the Information System and Computer Professional.** Contact: University of California at Los Angeles Extension, Continuing Education in Engineering and Mathematics, 6266 Boelter Hall, Los Angeles, Calif. 90024.

Dec. 6-10, New York — **CICS Command Level Programming.** Sys-Ed, One Park Ave., New York, N.Y. 10016.

Dec. 7-8, Boston — **How to Audit and Control Computer Systems.** Contact: New Hampshire College, Resource Center, 2500 N. River Road, Manchester, N.H. 03104.

Dec. 7-8, Washington, D.C. — **The World of Electronic Data Interchange.** Contact: Transportation Data Coordinating Committee, 1101 Seventeenth St., Washington, D.C. 20036.

Dec. 7-9, New Orleans — **Third National Symposium on Office Automation: Integrating Office Systems and Converging Technologies.** Contact: U.S. Professional Development Institute, 12611 Davan Drive, Silver Spring, Md. 20904.

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EDITORIAL

Don't Be a Grasshopper

DP managers might be well advised to reread Aesop's fable, "The Grasshopper and the Ant."

In the fable, the ant spends his summer diligently storing away grain while the idle grasshopper ridicules him for working so hard. When winter comes, the shivering grasshopper appears at the ant's home begging for food. As he locks his granary door, the ant tells the grasshopper: "Since you sang all summer, you shall have to dance all winter."

The moral: It is thrifty to prepare today for the wants of tomorrow.

The analogy is not lost on data processing professionals. While a recent CW survey indicated that economic pressures are holding DP budgets flat in 1983 [CW, Oct. 11], a Datapro Research Corp. poll reported that average dollar expenditures for software packages will almost double next year [CW, Oct. 25].

Clearly, demand for expensive applications is on the increase as businesses clamor to buy data base management, decision support and other systems in a struggle to keep up with the competition. However, the evidence indicates that DP managers will no longer have blank checks with which to finance the upgrades.

Managers should also be conscious of the mortality of their current software. As applications developed in the early 1970s run out of steam on the machines of the mid-'80s, DP managers may soon find themselves making expensive upgrades simply to maintain current levels of service. One consultant estimates that a 10-year-old DP shop with a $7 million annual operations budget will have to spend $8 million within the next five years just to replace worn-out software [CW, Nov. 15].

Finally, financial experts are now warning that users who have played third-party lessors against each other in order to find the best financing deal may soon encounter a dry market in that business. The stagnant economy is squeezing investment capital, they warned [CW, Nov. 15], a fact that may hit hard and suddenly at DPers considering hardware acquisitions.

As DP has come of age in recent years, its managers have been endowed with new respect. But they have also been saddled with the budgetary pressures that accompany acceptance, pressures that are compounded by decaying software and increasing user demand for solutions.

Those who follow the example of the ant will be better prepared for the coming winter.

DATA PAST

Five Years Ago
Nov. 21, 1977

PHOENIX — Honeywell Information Systems, Inc. restructured its Level 68 large-scale line to offer what the firm claimed was performance ranging from 125% of the IBM 3031 to 125% of the 3033.

The Level 68/Distributed Processing System replaced the Level 68/60 and 68/80 models, introduced in 1975 and 1974 respectively.

— — —

ALBANY, N.Y. — The New York State Tax Commission ruled that both proprietary and custom software were intangible and therefore not subject to state sales tax.

Ten Years Ago
Nov. 29, 1972

WASHINGTON, D.C. — Programmers who dreamed of getting rich by developing and patenting computer programs had their hopes dimmed by the U.S. Supreme Court. The Supreme Court, in a unanimous decision with six justices participating, ruled that some computer software is not patentable.

Thus the court upheld the claims by the U.S. Patent Office and the large mainframe makers and rejected those of many computer users and the software industry.

While some sources felt the court closed the door on all software patents, the decision contained contrary statements.

'Near as we can figure it, chief, he should look something like this!'

LETTERS

On Cleaning Cages

"Federal DPer Cleaning Cages for $49,538" [CW, Nov. 8] mentioned several items that explain why government spending is out of control. It is obviously not the arms race or defense spending. How many other industries, except the government, guarantee to rehire a laid-off employee, especially a white-collar one, at the "same pay," regardless of the pay called for by the job? Or even more pertinent, how many industries lay off employees and then give them all of their back pay when they do get recalled?

With the number of people being laid off due to policies that Congress has adopted over the last few years, Charles Day should be glad to accept a job cleaning cages for $14,000 per year.

The U.S. Constitution guarantees equal opportunity, not guaranteed lifetime employment for federal workers. They want pay equal to industry, but also want all the Civil Service guarantees. One cannot and should not have it both ways.

H.R. Gaston
Shenandoah Life Insurance Co.
Roanoke, Va.

Real Programmers Don't . . .

I offer my own list of Real Programmer qualifications in response to Jean Tricebock's reader commentary " 'Real Programmers' Don't Eat From Vending Machines" [CW, Nov. 1]. After all, we all know the following:

- Real Programmers can't spell quiche.
- Real Programmers think in binary.
- Real Programmers write their own sorts.
- Real Programmers think an eight-hour day is for sissies.
- Real Programmers loathe documentation.
- Real Programmers wouldn't use the word "loathe."
- Real Programmers don't do maintenance.
- Real Programmers brown bag their lunch.
- Real Programmers roll up their shirt-sleeves.
- Real Programmers don't drink decaffeinated coffee.
- Real Programmers never refuse a drink.
- Real Programmers smoke two packs of cigarettes a day.
- Real Programmers drive Volkswagen Beetles.
- Real Programmers never wear jackets except on interviews.
- Real Programmers make lousy managers.
- Real Programmers started as operators.
- Real Programmers don't have MBAs.
- Real Programmers don't work for banks or insurance companies more than one year.
- Real Programmers don't work for city, state or federal governments at all.
- Real Programmers code in pen.

I do not qualify as a Real Programmer; I just write about them.

Christine Joseph
Systems Analyst
Software Design Associates
Philadelphia, Pa.

Computerworld welcomes comments from its readers. Preference will be given to typed, double-spaced letters of 150 words or less. Letters may be edited for purposes of brevity and clarity. Letters should be addressed to Editor, *Computerworld*, 375 Cochituate Road, P.O. Box 880, Framingham, Mass. 01701.

SOFTLINE/Werner L. Frank

A Look at Alternative Implementation Schemes

In an earlier column [CW, Nov. 8], we identified three components of an implementation system. These are the semantics of a computer language, the language's syntax and the programming development environment.

Together these three elements comprise the overall framework for building and operating computer-based applications. The means by which one manages the enhancement of productivity in the solution of a computer-based problem is determined by where one operates in this implementation space.

To illustrate, we may have any one of the following problem scenarios for which an appropriate implementation environment is sought:

- The systems programmer wishing to build a new data base management system.
- The business systems analyst charged with developing a payroll application.
- The information analyst wishing to extract data satisfying certain conditions from an existing file.

Each of these situations leads to a different implementation strategy. These differences also raise the relevance of the popular notion of "user friendliness," which sometimes refers to semantics, often to syntax and, implicitly, to the manner of solution. "User-friendly," therefore, can mean many things, depending upon the experience and the needs of the implementor.

Does this three-dimensional construct adequately reflect the available alternative implementation schemes, and does it help to clarify the meaning and purpose of the various labels that are applied when discussing the subject?

In order to consider this question, the characteristics of alternative strategies are studied by analyzing the space spanned by an imaginary cube. To perform this analysis, we assume that the cube has a dimension of three units and employ the following notation to designate its eight vertices:

Axis	Measure	Relative Value
Syntax:	Procedural	0
	Nonprocedural	3
Semantics:	Machine language	0
	Application language	3
Environment:	DP tool-oriented	0
	Solution-oriented	3

The raster of 64 points that make up this cube represents the spectrum of implementation systems and gives us the opportunity of imposing a classification scheme. It becomes convenient to look at this cube in successive slices, which are taken at points 0, 1, 2 and 3 along the syntax axis. These planes are better represented in tables, the first of which is shown in the enclosed table. The remaining three tables will be considered in future columns of this series.

Integrated Solution	VM/CMS/SPF 003	ADA 013	INTERLISP 023	ACP 033
Application Generator	RE-USABLE CODE 002	MAESTRO 012	ADF 022	SCRIPT 032
Structured Discipline	PL/360 001	PASCAL 011	APL 021	APT 031
Ad Hoc Aids	BAL 000	COBOL 010	IMS 020	DISSPLA 030
	Assembler	Compiler	Symbolic/ Function	Application

Implementation Schemes for Algorithmic Syntax

The origin, at (0,0,0), reflects the implementation scheme, which employs the conventional algorithmic-oriented assembler program supported by the operating system, teleprocessing monitor and basic file access methods.

An example is the BAL system of IBM, operating in a DOS or OS environment. This is the environment wherein real-time, custom-coded applications are typically implemented, because throughput performance and special I/O requirements are inherently present.

A closely related and more desirable position along the environment axis is the symbolic point (0,0,1), which introduces structured disciplines exemplified by the IBM PL/360 language. This enhances productivity over the (0,0,0) alternative. Further up the environment axis is the symbolic point (0,0,2), which adds the reusable code facility to the implementation scheme.

More Productivity

For professional programmers, the implementation environments represented by (0,0,0), (0,0,1) and (0,0,2) progressively yield more productivity. At the point (0,0,3), we reach the integrated solution environment, which is a complete system for program development. This must include an integrated capability of the operating system, utilities, development languages, a text editor, file handlers and file systems. A good example closest to the basic machine facilities is the VM/CMS/SPF system available for large IBM computers.

Another closely related assemblage of application-building systems is represented by points (0,1,0), (0,2,0) and (0,3,0) along the semantics axis. These approaches differ from the first set in that a significant departure is now provided in syntax, the manner in which to state and execute an application.

While generality in program construction is retained as one moves out along this axis, the languages become more function- or application-oriented. Appropriate examples are: the Cobol or Basic compiler and interpreter, for point (0,1,0); the IBM IMS macros in support of data base management functions, at point (0,2,0), and Dissipla, representing point (0,3,0).

(Continued on Page 36)

HUMAN CONNECTION/Jack Stone

Self-Assessment Plays Integral Role In 'Suitability' Theory of DP Hiring

This is the third article in a three-part series on the suitability factor in DP hiring.

A.L. LeDuc, director of computer services planning and analysis at Miami-Dade Community College in Florida, puts forth the thesis that a set of personal factors, loosely gathered under the label of "suitability," must be considered in the placement of data processing professionals into new and promotable positions.

His arguments are, of course, controversial. Judgments of a person's suitability for a job, all other things considered, are in part made on subjective grounds and are therefore subject to dissent.

On the other hand, professionals that have been around a long time can usually identify those who will excel at new positions and those who won't.

Further Complications

There are also further complications, of which LeDuc is aware. These relate to the intrinsic fairness — and related legality — of making assessments of suitability. In this column, LeDuc addresses these points and others.

"We should be able to discover shadings of suitability. There is an unfortunately anti-democratic ring to this kind of talk. It sounds elitist. And it is true that the determination of suitability can be construed as an act of discrimination.

"But let me emphasize that in bringing up suitability as a job criterion, I am not adding 'hidden qualifications' such as social acceptability or other subtle characteristics that are not job-content dependent. Rather, I am emphasizing a form of aptitude.

"Moreover, I believe that job choices should be made by the employee and employer together and should ultimately be based on the suitability of a person for a particular job.

"One of my friends has suggested to me that suitability is quantifiable, or that it should be. He noted that for some jobs, it is patently obvious. A fireman has to be brave and strong, a real estate agent must be outgoing and so on.

"But I tell him there are no similarly easy or snap judgments that can be made for computer-related occupations. Besides, I'm not anxious to step into the middle of the computer aptitude test controversy. The suitability I am talking about is frequently an attribute discovered only after time has passed. It is not just that we haven't decided what kind of aptitude leads to success, but that success 'wears many faces.'

"As a classic example, there are gregarious programmers, there are severely introverted programmers and there is a wide variety in between. Any of these people may be suitable — or unsuitable — for the programmer job.

"In last week's article, I mentioned a student nurse who found herself unsuitable for a nursing career.

"She was correctly motivated, had adequate opportunity and unusual sopport. But it is a mark of her triumphant character that she found the courage to make a realistic self-assessment of her suitability and left nursing for another job truly suited to her inherent characteristics. Her career change was certainly not a failure.

"Three conclusions on this subject are apparent:

- "Employers have a duty to identify and admit the form of selectivity through suitability that exists in job placement, in promotion decisions and in career-path construction.
- "Managers have a duty to counsel employees in an honest way about the suitability of their future career plans.
- "Employees need to take serious stock of their intellectual, psychological and social attributes — and their limitations. They need to admit limitations to themselves, not just those that arise because of limited education or training, and not just those that the cynics lump into the category of company or office politics. Other, very real barriers are in place. They are the barriers of suitability."

Letters to Stone should be addressed to him at Box 270, 1377 K St. N.W., Washington, D.C. 20005.

Alternative Implementation Schemes

(Continued from Page 35)

Dissplа is a product of Integrated Software Systems Corp. and consists of Fortran subroutines that can be called by a user's program in order to produce virtually any type of data display. It is a graphics application support system.

We next note the introduction of structured disciplines in formatting and expressing the computer requirement. A foremost example of a structured language is Pascal, shown at point (0,1,1). A number of commercial products, such as Metacobol of Applied Data Research, Inc., have also addressed this requirement by enhancing the use of the standard Cobol language.

Representing the symbolic/function category, at point (0,2,1), is the highly specialized language APL. This category could also have been represented by the Lisp system, aimed at the artificial intelligence model builder. For the more application-oriented structured discipline at point (0,3,1), we identify the Automatic Program Tool language for stating and controlling numerical control machines.

An interesting combination of application-generating capabilities is represented by the Maestro system of Softlab Systems, Inc. at point (0,1,2). This implementation scheme supports the generation of Cobol language solutions, imposing both a structured discipline and access to reusable code.

Continuing along the application-generation category is the Application Development Facility (ADF) of IBM identified at point (0,2,2). ADF represents a procedural emphasis in generating applications to operate with the aforementioned IMS.

The application-oriented code generator shown at point (0,3,2) is Script. This is an IBM software product that operates in a time-sharing or conventional operating system environment and provides text formatting facilities.

Through a standard editor-like process, a text file is created with embedded command language specifiers that direct the ultimate format of the text.

Using Script, it is possible to generate a final formatted result equivalent to that created by a word processing system or a product suitable for photocomposition. Thus, Script is an application generator used to create a variety of formatted documents.

Completing the table are the entries Ada, Interlisp and the Airline Control Program (ACP), positioned at (0,1,3), (0,2,3) and (0,3,3), respectively. Ada (or, more correctly, Apse) is not yet a reality, but it appears in this slot because it is a complete development environment representing a comprehensive, solution-oriented set of tools and support systems.

Bell Laboratories' Unix, with all of its workbench tools, might be an alternate occupant of point (0,1,3).

Sophisticated Users

Interlisp is a programming environment based on using the Lisp language. This system is geared to sophisticated users exploring applications in artificial intelligence. Hence, the programming problems attached are quite different from those more conventionally solved with procedural languages.

In fact, Lisp addresses those problems that usually cannot be specified at the outset, but require evolution as they are solved. Interlisp is an integrated solution system because it provides all of the support facilities necessary to generate and execute the application.

ACP is the solution environment for the administration of airline reservations and related functions. This IBM software, which is general purpose and industry-oriented, provides the software modules and tools for implementing a system for a specific airline.

Having its origin in the Programmed Airline Reservation System, ACP is now used in a wide variety of fast-response, high-volume functional areas, requiring the handling of tens of thousands of terminals.

Applications extend even beyond airlines data processing. ACP has been enriched by a procedural-oriented application language, Sabertalk, developed by Eastern Airlines and American Airlines. ACP gives the user an integrated development environment that is application-oriented.

Frank is executive vice-president of Informatics General Corp. in Woodland Hills, Calif.

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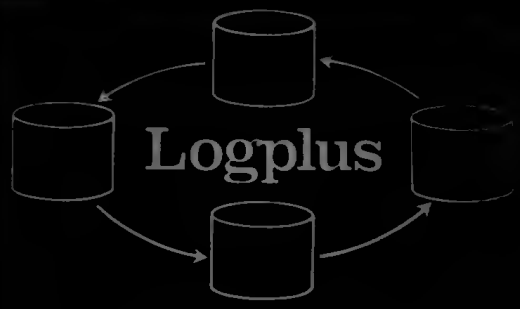

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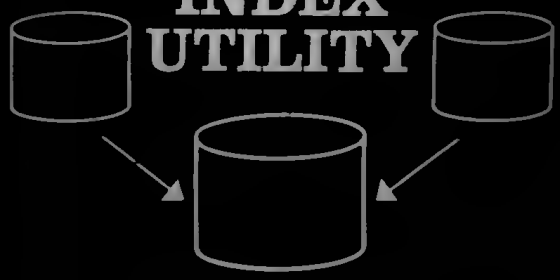

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IBM 3270 Terminals Get Spreadsheet Package

NEW YORK — An electronic spreadsheet package for use on IBM 3270 family terminals connected to IBM and plug-compatible mainframes running under VM/CMS has been announced by Parallax Systems, Inc.

Execucalc is upwardly compatible with Visicorp's Visicalc spreadsheet product to eliminate the need for retraining, a Parallax spokesman noted.

Execucalc is intended to solve some of the problems encountered by microcomputer users of spreadsheet software. Because it runs under VM, Execucalc permits use of "virtual work sheets."

Its calculation speed is said to be faster than that possible on micros because its host computer is a large mainframe. It provides variable column widths rather than splitting text across cells.

The software also includes on-line Help screens and explanatory error messages through all levels of usage, the vendor noted. Storing work sheets in CMS files, users reportedly may share work sheets with each other, transfer work sheets between the micro and mainframe, access corporate data and print reports on a high-speed printer.

Execucalc uses standard IBM software products and requires no systems modifications, according to the vendor, but a copy of IBM's VS APL is required.

Execucalc can be licensed from Parallax for $5,000 plus an annual maintenance fee of $750. Parallax is headquartered at 331 W. 71 St., New York, N.Y. 10023.

Bank's Need to Extend Time-Sharing Spurs Nomad2 Development

By Susan Blakeney
CW Staff

SAN FRANCISCO — When the Bank of America decided to extend its time-sharing support services to more banks overseas, the main obstacle it encountered was its operating system.

The bank had been using National CSS, Inc.'s (NCSS) VP/CSS operating system as well as its Nomad data base management software in-house for a number of years to offer time-sharing services to bank clients all over the world.

However, the overseas banks could not obtain support for VP/CSS. This and other considerations prompted the bank's decision to move to an IBM VM/CMS environment.

The bank wanted to take NCSS' Nomad into the VM/CMS environment. The solution to that problem was simple: "We asked NCSS to build it," said Coby Dunn, vice-president of international corporate services at the bank.

In the process, the bank became part of the NCSS development effort for its recently announced Nomad2 Information Center product, which includes an in-house version of Nomad for VM/CMS.

Dunn's department offers time-sharing services to the bank's 10,000-plus internal users. He also heads up product management and planning for the bank's present and future internal offerings.

"We wanted to migrate our internal usage to VM rather than continue using VP/CSS," Dunn explained. For a better, faster network and to get better worldwide support of an operating system, "VM fits better."

The conversion to Nomad2 was an easy one, according to Dunn.

"The system is already written in Nomad — and we could not have rewritten all that code. Nomad2 will run Nomad programs," he said.

"The changes we did have to make were all highly automatable," he added.

Nomad2 runs in the bank's IBM VM/370 internal time-sharing environment on an IBM 4341 Group 2 under VM/CMS.

Using Nomad2, Dunn's staff of 130 people has developed a VM-based financial system for its client banks called A Bank of America's Computer Information Service (Abacis).

Nomad2 offers statistical arrays, increased functionality and screen support "as opposed

(Continued on Page 42)

To Be Released April 1

Portable SAS for VAX-11 Offered

CARY, N.C. — SAS Institute, Inc. has announced a version of Portable SAS for Digital Equipment Corp. VAX-11 superminis running under VAX/VMS.

Portable SAS for the VAX-11 reportedly will include the SAS data management, statistical analysis and report writing software, SAS/Graph color graphics, SAS Econometrics and Time Series and SAS Full Screen Product.

The production version of Portable SAS is scheduled for release April 1. During the first quarter of 1983, interested users can receive a test version of the product for use on Data General Corp. minicomputers and DEC VAX-11 systems at no charge.

SAS Institute and DEC have signed a cooperative marketing agreement whereby both SAS and DEC will offer their customers licenses for the VAX-11 version of Portable SAS. This is the first cooperative marketing agreement between SAS Institute and a hardware vendor, noted Dr. James H. Goodnight, SAS president.

First-year licenses for SAS range from $5,000 to $7,500, depending on the processor. Yearly renewals are $2,800. Additional SAS products are licensed separately.

SAS is at SAS Circle, Box 8000, Cary, N.C. 27511.

'Extracto,' IDMS Interfaced

TORONTO — Optipro, Inc. has announced an interface between its Extracto data management and reporting language and Cullinane Database Systems, Inc.'s IDMS data base management system.

Extracto runs on IBM and plug-compatible mainframes as well as Sperry Univac 90 and 80 computers under the OS3 and VS9 operating systems.

Extracto reportedly allows users to load, update or purge an IDMS data base without extensive knowledge of IDMS. Extracto will also work directly from Cullinane Integrated Data Dictionary (IDD) definitions. Extracto costs $20,000 with the IDMS interface available for a one-time license fee of $5,000 and the IDMS IDD interpreter for an extra $2,000. Optipro said from Suite 308, 330 Bay St., Toronto, Ont., Canada, M5H 2S8.

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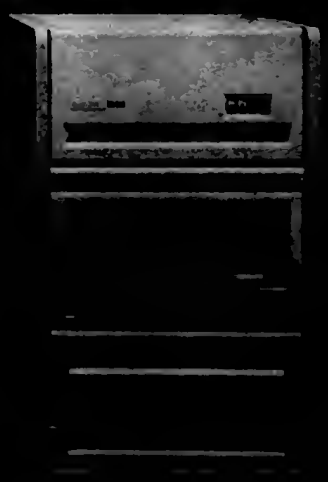

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Set of Subroutines

Tool Out for Interactive Programs

TULSA, Okla. — Datamate Co. has announced software designed to help programmers writing interactive screen programs.

The Interactive Screen Control (ISC) consists of a set of callable subroutines for data entry and display on IBM 3270-like CRTs, using IBM mainframes and plug-compatibles under MVS in IBM's TSO operating environment, according to the vendor.

The subroutines reportedly perform direct access to a given line and column position on the CRT screen and allow the user to erase the screen, sound the bell and display and accept data and literals.

The screen input module will perform right justification and zero-filling of numeric input if requested, the vendor said. It can also prompt the operator for field size with a user-selected prompt character.

The subroutines are reportedly callable from Cobol, Fortran and Assembler programs.

The product sells for $1,500 from Datamate Co., Suite 101, 4135 S. 100th East Ave., Tulsa, Okla. 74145.

'Cobol Glossary' Release 3 Features 'ICCF' Interface

FAIR GROVE, Mo. — MacKinney Systems, Inc. has announced Release 3 of its Cobol Glossary, featuring a direct interface to IBM'a Interactive Computing and Control Facility (ICCF) libraries.

The Cobol Glossary runs on IBM mainframes and plug-compatibles under DOS. It is a documentation/maintenance tool that reportedly reads a library of Cobol programs and produces systemwide cross-reference lists for data names, file names, Copy command books and more. It also produces lists of remarks in each program, the vendor said.

The ICCF interface reads the ICCF data set and scans all libraries or selected libraries for members to be processed, the vendor explained. It will read compressed members as well as expanded members and can be used while the ICCF is up or down, according to the vendor.

The vendor said that the software can be adapted for other than IBM and compatible computer systems with minor modifications. The product is available for $395, from MacKinney Systems, Rt. 2, Box 270-A, Fair Grove, Mo. 65648.

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'Fincontrol' Out for IBM

ATLANTA — Datacamp Systems, Inc. has announced a financial modeling and cash management package for the IBM System/34.

Fincontrol can interface with the IBM Mapics general ledger package. It can also be used as a stand-alone package providing more than 30 programs including budgeting, cash-flow simulation and controlling of expense items in a centralized purchasing environment, its vendor said.

The package is available for a one-time charge of $1,495. A 30-day evaluation package costs $20, Datacamp said from Suite 1, 2283 Dunwoody Crossing, Atlanta, Ga. 30338.

Bank Moves To Nomad2

(Continued from Page 39)

to dial-up line-at-a-time terminals," Dunn noted, and this has improved productivity in the applications development and data collection areas.

"It'a a very good fourth-generation language, and it has a lot of functions," Dunn maintained. "We are looking to utilize Nomad2 and its new features in our systems.

"My mission in life for the interactive services is to deliver tools for the end users to do cost-effective computing — whatever functions they're trying to perform. I'm looking to increase their functions with the help of Nomad2," Dunn summarized.

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A new software tool from IBM can reduce from months to days the development time for new online programs. That's good news for you and even better news for your end users: the new software can help you produce the type of programs they've been clamoring for.

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You can also use ISPF to add a "front-end" dialog to existing applications to make them easier to use. And ISPF is a powerful tool for quick "prototyping" of online programs under development.

ISPF is an enhancement of IBM's popular System Productivity Facility (SPF). It now includes two products: the dialog manager and the Program Development Facility (ISPF/PDF). They run under MVS/TSO and VM/CMS.

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Version 2.1 of 'Datacomp' Unveiled for IBM OS Users

NEW YORK — Micromax Computer Intelligence, Inc. has announced Version 2.1 of its Datacomp data comparison utility for IBM OS environments.

Datacomp compares any combination of files written on tapes, disks or other magnetic media. It supports all types of file organization and all record formats, a spokesman said.

Datacomp does not require specification of any file-related data, but provides the user with basic data set information. Datacomp allows users to define keys for sequential files, suppress key or record differences, specify key and record ranges, select and replace fields, select and ignore particular records based on provided criteria, control end-of-file processing, restrict unsuccessful comparisons and customize reports, the spokesman claimed.

During execution, Datacomp provides users with a comprehensive report, including diagnostic messages, missing keys and records information, statistical messages and condition codes.

The package costs $6,000 from Micromax, 55 John St., New York, N.Y. 10038.

Oxford Software Ups 'UFO' Prices

HASBROUCK HEIGHTS, N.J. — Oxford Software Corp. has announced a 20% price increase on its user Files On-Line (UFO) software, effective January.

The new prices for a perpetual license to UFO will be $24,000 for the IBM DOS version. The new price for the IBM OS version will be $33,000.

Annual maintenance will be held at 1982 levels, according to the vendor.

UFO is headquartered at 174 Blvd., Hasbrouck Heights, N.J. 07604.

Available Via T/S

Financial Data Management System Out

FAIRFIELD, N.J. — The Rapidata Division of National Data Corp. has made available via time-sharing a Financial Data Management System (FDMS), which is intended to further enhance its Fiscal financial planning and reporting language.

FDMS is reportedly accessible through any user-developed program utilizing Fortran or Fiscal and will reportedly enable users to build data bases with up to 2,000 reporting level organizations, 2,000 consolidation level organizations and 1,000 defined consolidation paths. The system's work sheets can have up to 2,000 rows and 400 columns, and each reporting and consolidation level organization in the data base can have unlimited data work sheets. As a Fiscal data management system, FDMS provides users with a range of planning and reporting capabilities, including goal seeking, sensitivity and multiscenario analysis, the vendor said. The data bases can also reportedly be adjusted for reorganizations and chart of account changes and data can be reported in a variety of report formats.

FDMS is available on the vendor's Rapidten remote computing service, which can be accessed through standard data terminals or microcomputers. Charges for FDMS are based on computer resources used. Further details can be obtained from Rapidata at 20 New Dutch Lane, P.O. Box 1049, Fairfield, N.J. 07006.

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'Vpars' Package Said to Allow Testing of 'ACP'

MOUNTAIN VIEW, Calif. — A product that reportedly allows simultaneous testing of multiple IBM Airline Control Program (ACP) systems that share a common data base has been unveiled by National Advanced Systems (NAS).

The Virtual Passenger Airline Reservation System (Vpars) application software enables ACP users to test different versions of ACP under IBM's VM/370 operating system without the need for creating separate data files, the vendor explained. Vpars is available for all NAS systems and IBM System/370, IBM's 3000 series and 3080 series machines.

Through minor modifications to VM, Vpars utilizes VM minidisks for handling modifications to the ACP data base. This technique allows multiple VM machines to share common ACP files, according to the vendor.

Vpars costs $10,000. NAS can be contacted at 800 E. Middlefield Road, Mountain View, Calif. 94042.

'Aces' Enhanced For IBM CPUs

NEW YORK — Woodward Ryan Sharp and Davis, Inc. has announced an enhanced version of its Automated Claims Entry System (Aces) for IBM mainframes supporting 370-era software.

New features include a correspondence capability, a plan benefits maintenance feature, the capability to calculate and display claims under both single and multiple plan situations, the ability to monitor pending or prior-approved claims and the ability to store claims histories.

In addition, new features include a set of adjudication files and codes, a flexible processing flow and a security-conscious operational mode, the vendor said.

The package costs $150,000 plus $15,000 for functional specifications. The vendor is located at 3 Park Ave., New York, N.Y. 10016.

Wang 2200 Gets Real Estate Aid

CHICAGO — A real estate analysis package for users of Wang Laboratories, Inc. 2200 series of minicomputers has been introduced by Shlaes & Young Information Systems, Inc.

Real Estate Analytical Models (Ream) is said to produce sophisticated cash flow forecasts on a tenant-by-tenant basis with no practical limit on the total number of entries, a vendor spokesman said.

The package is a subsystem of the company's Comprehensive Real Estate Asset Management System package for fiduciaries. A spokesman said that the package contains user-friendly features which correct unreasonable responses and syntactical errors.

Ream costs $16,000 from Shlaes and Young at 405 N. Wabash Ave., Chicago, Ill. 60611.

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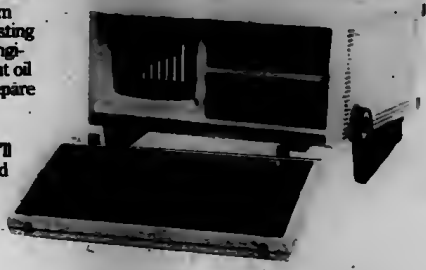

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'IDSS' for VAX-11 Announced, Boasts Interface to Oracle DBMS

TORONTO — An interactive decision support system (IDSS) for Digital Equipment Corp. VAX-11 superminis that includes an interface to Relational Software, Inc.'s Oracle data base management system (DBMS) has been announced by Management & Planning Software Group (MPS).

IDSS, scheduled for release in January, is a new implementation of the MPS' Modeling & Planning System, which also included an interface to Oracle.

IDSS reportedly is fully interactive and uses the spreadsheet or matrix concept. It features an English usage syntax and either a full-screen or line-by-line data entry facility that the user may select.

Simulation techniques include "what-if" analysis, sensitivity analysis, iterative goal seeking, risk analysis simulation and optimization, the vendor explained.

The package also includes a report writer facility and an external file interface. It is the latter feature that is said to enable information from Oracle DBMS files to be accessed by users of IDSS transparently.

A fully supported perpetual license fee for the first copy of IDSS is $60,000, including the Oracle interface. The second copy is available for $30,000. Full technical support after the first year is available for $6,000 per year.

Three-day workshops and on-site training courses are available. MPS is located at Suite 201, 201 Consumers Road, Willowdale, Toronto, Ont., Canada M2J 4G8.

Investment System Bows For DEC's PDP-11, VAX-11

NEW YORK — An investment management system for Digital Equipment Corp. PDP-11 and VAX-11 computers has been announced by Arbat Systems, Inc.

The Securities Investment Management System (Sims) is said to offer decision support and back-office capabilities. The information is on-line and includes valuations from the latest market prices, portfolio performance monitoring and tracking of dividends due and dividend payments. Historical information such as past dividends is reportedly also available.

Back-office capabilities include deal confirmations, broker, tickets, tax vouchers, delivery notes and accounting records. Sims can also be linked to an in-house accounting system to reduce the time needed for settlements and to reduce manual errors, a spokesman said.

Comprising nine modules, available separately, Sims ranges in price from $90,000 to $200,000 from 5 Hanover Sq., New York, N.Y. 10004.

VAX Users Get Language

CHICAGO — An interactive computer language designed for users of Digital Equipment Corp.'s VAX-11 minicomputers has been announced by Speakeasy Computing Corp.

Speakeasy IV is said to combine English language commands, mathematical notation and extendability for use by engineers, scientists and financial analysts.

The offering also features a graphics capability that is interactive and device independent and includes line, continuous, bar, pie histogram and three-dimensional color plots, the vendor claimed.

Speakeasy IV carries an annual $9,000 license fee from Speakeasy, 222 W. Adams St., Chicago, Ill. 60606.

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System Formats Assembler, JCL On IBM CPUs

LYONS, Ill. — General Electronics has announced the availability of a language formatting system that consists of three separate products.

The products run on IBM mainframes and plug-compatibles under OS/MVS, OS/VS, DOS and DOS/VS.

The three-pronged system consists of formatters for assembler, Cobol and IBM OS JCL. They have default alignment positions that can be redefined at runtime to meet specific installation standards, according to the vendor. None of the formatters reportedly require special coding and all accept existing programs and JCL without change.

The complete series can be purchased for $12,000 or purchased separately for $5,000/module. Further information is available from the vendor at P.O. Box 79, Lyons, Ill. 60534.

IBM Users Get Enhanced Hibol

EDEN PRAIRIE, Minn. — Delphi Data Systems, Inc. has announced Release 1.2 of Hibol, the firm's high-level language and integrated data dictionary for IBM mainframes.

Enhancements include improved coordination of files and data, on-line data dictionary maintenance and a utility program that enables Hibol programs to be generated from a single line of input, the vendor said.

Hibol generates and maintains modular Cobol programs in both an on-line or batch environment. On-line programs can include menus, file maintenance and file inquiries with a single program handling multiple screens and files. Batch programs can process multiple files and reports as well as perform selecting, control breaking and subtotaling functions, the vendor said.

The package costs $19,995 for IBM DOS operating systems and $24,995 for OS operating systems. The vendor is located at 9905 Hamilton Road, Eden Prairie, Minn. 55344.

HP 3000 Aid Converts System/34 Programs

MONTREAL — Info-Boutique International, Ltd. has announced a software package that reportedly converts IBM System/34 batch and on-line programs for use on Hewlett-Packard Co.'s HP 3000 computer.

The package, called "IBM System/34 to HP/3000 Conversion," will reportedly convert on-line RPG-II programs and data file utilities to the HP 3000 without rewrite. Conversion tools also convert local data areas, a vendor spokesman said. IBM RPG-II batch programs are converted to HP RPG-II, and IBM Ebcdic data files are converted to HP Ascii format. IBM/3741/3742 keypunch devices are retained or replaced by on-line software tools, the spokesman said.

Prices begin at $5,000 from Info-Boutique at Suite 201, 7575 Trans-Canada Highway, Ville St. Laurent, Quebec H4T 1V6.

Data Compressor Fits IBM 370s

DOWNERS GROVE, Ill. — Circle Software Corp. has announced a data compression package for IBM 370 and compatible mainframes running under MVS and OS/VSI.

C-Datapak reportedly compresses data by eliminating redundancy through downstream compression; it also expands the data to restore it to its original form. Both on-line and archival data can be compressed to fit more data on a tape or disk.

C-Datapak is compatible with high-level and assembly languages such as Cobol, PL/I and Fortran, as well as other Circle software. It costs $2,960, with one year's maintenance, from the vendor at Suite 240, 1100 31st St., Downers Grove, Ill. 60515.

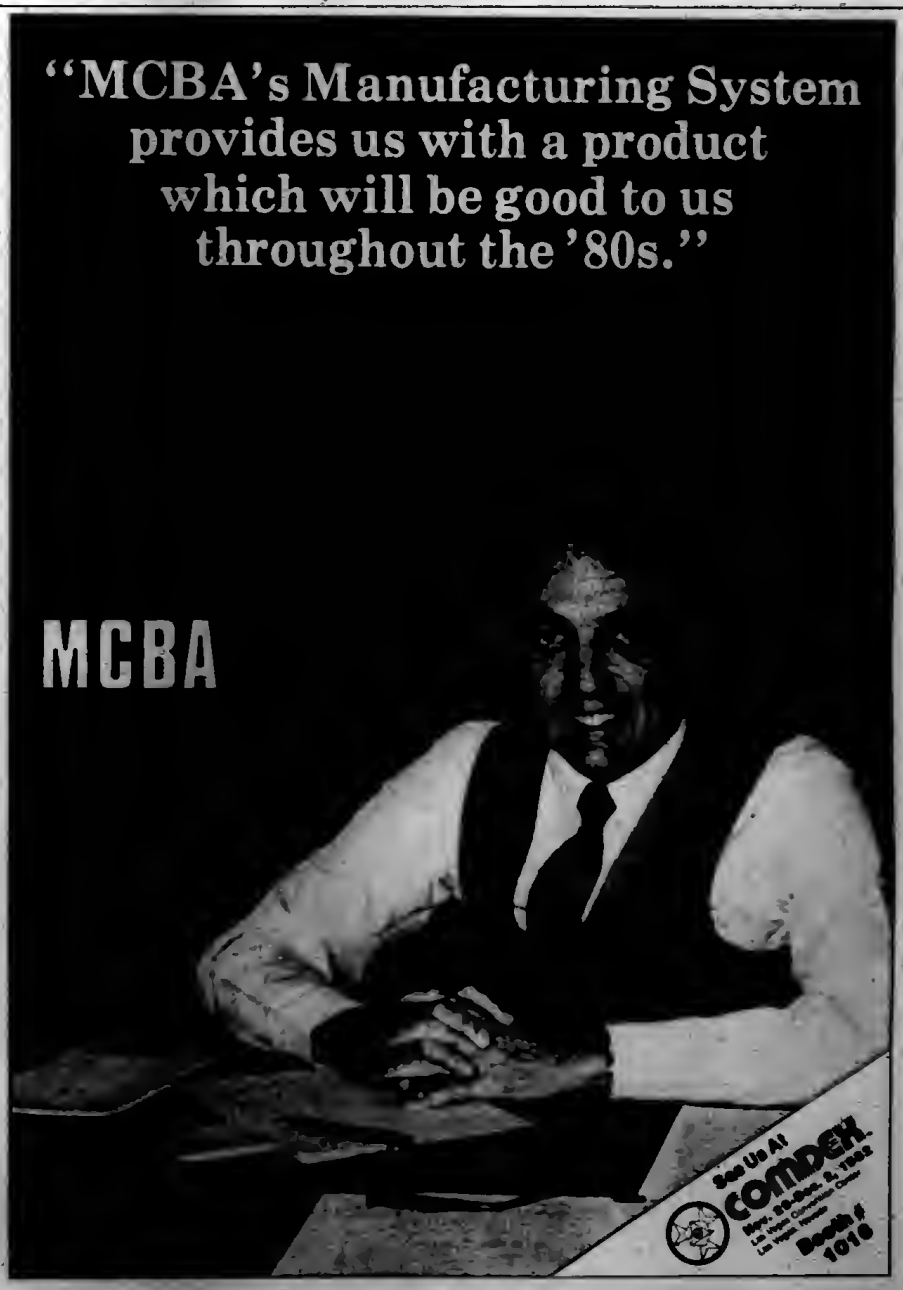
Interactive Printing Service Combines Xerox 9700, T/S

NEW YORK — Landart Systems, Inc. has introduced an interactive service that reportedly combines high-speed Xerox Corp. 9700 laser printing, graphics, typesetting and digitizing capabilities with a remote time-sharing system to produce reports, manuals, newsletters, direct mail items, books and illustrations.

The Laserlink service consists of the Xerox 9700 Electronic Printing System with graphics option, a Xerox 1050 scanner and Xerox Integrated Composition Software (Xics) for typesetting. Users can subscribe to one or a combination of these subservices, the vendor explained. The laser printer outputs plots, combines text with graphics illustration and collates originals at speeds up to 7,000 page/hour, the vendor said.

User input to Laserlink services can be made via CRT terminals, graphics terminals, hard copy, word processors, microcomputers or videotex terminals. For Xerox 9700 users without the graphics option of Xics software, Laserlink will handle pilot projects until a company decides to install in-house system enhancements.

Time-sharing prices are based on job volume and connect time. Further details may be obtained from the vendor at 140 Cedar St., New York, N.Y. 10006.



National Semi Offers Tools for Designers

SANTA CLARA, Calif. — National Semiconductor Corp. is offering a series of software programs for designers available on a set of disks with written program instructions.

The Software Applications for Engineers series and its Applications for Computer Terminals (ACT) program instructions are said to provide the system design engineer with an interactive set of design tools.

Each ACT software package comprises a set of primary and secondary programs on one or more 8-in., single-sided, single-density floppy disks, requiring a Digital Research, Inc. CP/M operating system.

The first in the series, ACT-1, gives the memory system designer an aid for single-bit error-correcting systems using the firm's DP8400 monolithic error-correction chip.

ACT-1 costs $95 and includes a four-page instruction booklet from 2900 Semiconductor Drive, MS14208, Santa Clara, Calif. 95051.

Micro Notes

Other Micro Software

Unique Automation Products, Inc. has announced expansion of its **Uaplink** file transfer and media conversion software to include the IBM Personal Computer and Osborne Computer Corp. Osborne 1 microcomputer in both micro-to-micro and micro-to-mainframe configurations. Uaplink links similar and dissimilar operating environments and features single-user control, protocol protected binary and text transfers, data compression, virtual user facility and intelligent terminal mode, a spokesman said.

The package is also available for Digital Equipment Corp.'a RT-11, RSX-11M, RSTS and VAX/VMS operating systems. A special implementation is available for the DEC VT-18X microcomputer with Digital Research Corp.'s CP/M operating systems. The Personal Computer and Osborne 1 modules cost $250, a spokesman said from Suite L, 17922 Sky Park Circle, Irvine, Calif 92714.

Supersoft Associates has announced a **personal data base (PDB) program** for the IBM Personal Computer. The package is said to be useful for such business tasks as customer and mailing lists, inventory maintenance, tax records, client accounts and job reports, as well as a variety of personal uses.

Users reportedly can create files and records with complete control over the size and layout of all fields in the individual records and sorting of two different fields or searching of as many as three fields simultaneously. The PDB package costs $125; Supersoft can be reached through P.O. Box 1628, Champaign, Ill. 61820.

Personal Systems Technology, Inc. has announced a software print spooler for the IBM Personal Computer. Called **Wait-less**, the spooler is designed to use a portion of main memory as the spool buffer. The package supports both parallel and serial printers and user-selectable buffer sizes from 2K to 16K bytes. Buffer size may be automatically assigned when the system is initially loaded, the vendor said. The spooler costs $49.95 from the vendor at 22957 La Cadena, Laguna Hills, Calif. 92653.

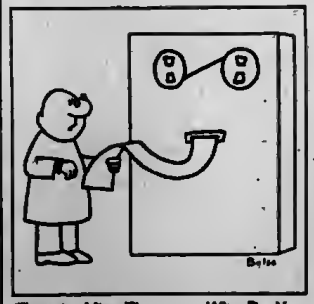
Solutions, Inc. has announced two products that enhance Visicorp'a Visicalc spreadsheet package. **Visibridge/GL** is said to allow data from Tandy Corp.'a general ledger package for the TRS 80-II to be used in calculations and reports produced with Visicalc without reentry of data. The product costs $195.

Visibridge/RPT reportedly enhances the report printing capability of Visicalc. It automatically segments reports that are too long or too wide for a single sheet of paper, creates a variable column width capability, aligns decimal points and performs right and left justification and centering, a spokesman said. The package runs on Tandy Corp.'a TRS-80 models I, II, III and 16 and the IBM Personal Computer. All versiona cost $79. The vendor can be contacted through Box 989, Montpelier, Vt. 05602.

Micro-Sparc, Inc. has introduced the **Global Applesoft Line Editor** for the Apple Computer, Inc. Apple II. It is said to give programmera the ability to perform global search and replace of any specified character or characters throughout a program. Line-by-line editing is said to allow changes without recopying an entire line. It is available for $39.95 from the vendor through Department P, Box 325, Lincoln, Mass. 01773.

MBP Software and Systems Technology, Inc. has introduced an Ansi Level II **Cobol Compiler** available on Intel Corp. 8086-based aystems. Among the operating aystems the package supports are Digital Research Inc.'a CP/M and Microsoft, Inc.'s MS-DOS. It is said to generate native machine language object code and is available for $500 from the vendor at Suite 626, 7700 Edgewater Drive, Oakland, Calif. 94621.

N.F. Systems, Ltd. has introduced four software packages for the IBM Personal Computer. **Filemaster** ($99.95) offers file creation and maintenance functions, including report generation capabilities. **Textmaster** ($99.95) offers a full set of text formatting functions used to print customized form letters, reports, documentation and formatted program listinga. **Screenmaster** ($79.95) is a full-screen generator that is said to build and modify full-screen displays and menus for program input and output. **Comparemaster** ($34.95) is a file comparison utility that is said to display all differences between two files in a comparison report. More information is available from the vendor through P.O. Box 76363, Atlanta, Ga. 30358.



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Nata Head Blames AT&T Plan

Rate Hike Predicted for Business Users

By Phil Hirsch
CW Washington Bureau

WASHINGTON, D.C. — Substantial rate increases for business telecommunications users are likely if AT&T's initial capitalization plan for American Bell, Inc. is implemented, according to the chief spokesman for independent private branch exchange and telephone terminal makers.

The capitalization plan for the phone company's new deregulated subsidiary was recently approved by the Federal Communications Commission (FCC). The plan will allow American Bell to acquire the terminal and related assets of the Bell operating companies at far less than their true market value, contends Ed Spievack, president of the North American Telephone Association (Nata). Nata is composed of manufacturers whose terminal equipment competes directly with the offerings of the Bell operating companies.

To recoup their losses, many Bell operating companies will have to raise their rates, Spievack said in a recent interview here. Since state regulators are reluctant to increase telephone service charges for residential customers, the burden will fall most heavily on business customers.

One way AT&T allegedly has shortchanged the Bell operating companies and their customers is by specifying that American Bell will purchase the Bell operating companies' assets on the basis of "adjusted net book value" — their current value less accumulated depreciation and other tax credits. By July 1984, Spievack said, this scheme will enable American Bell to buy $438 million worth of Bell operating company assets for $327 million.

In addition, Spievack pointed out, the capitalization plan calls for American Bell to pay the Bell operating companies only about 20% of what they have invested to develop the terminals in their current inventories. Moreover, he added, the plan assumes American Bell will be given the Bell operating companies' customer data base at no cost, putting the worth of that information at about $2 billion.

However, it is uncertain whether the FCC's recent approval of the AT&T capitalization plan will be the final word. Spievack indicated that Nata will ask the commission to reconsider its decision, if that fails, it will ask for review by the U.S. Court of Appeals.

Earlier this month that court declined to review the FCC's Second Computer Inquiry Decision, which specified that terminals are competitive offerings and thus must be marketed by AT&T through a subsidiary separate from the regulated side of the phone company's business.

Amendment to FCC Ban Sought

WASHINGTON, D.C. — Federal Communications Commissioner Joseph Fogarty along with Glenn Watts, president of the Communications Workers of America, has proposed amending the Second Computer Inquiry decision to let Bell operating companies market new terminals.

The decision bars regulated carriers from marketing such equipment, but the two officials argued last week in letters to the Federal Communications Commission (FCC) that the ban will be only temporary because the settlement of the U.S. vs. AT&T antitrust case allows the operating companies to sell new terminals after divestiture, which is generally expected to occur Jan. 1, 1984.

Their basic point was that the Bell operating companies, if forced to retire from the new terminal market for a year, might decide to offer terminals — usually referred to as customer-provided equipment (CPE) — on a restricted basis to minimize their start-up costs. "At the same time," Watts added, "the AT&T subsidiary (presumably American Bell) offering CPE may make a similar decision . . . The result . . . would be unforeseen difficulties imposed on users of telecommunications . . . in meeting their needs."

Meanwhile, AT&T has recommended that the FCC allow the operating companies' installed terminal base and existing terminal inventory to be detariffed and transferred to American Bell beginning next July. The transfer would occur in stages and be completed by Jan. 1, 1984.

AT&T would honor all existing lease/rental agreements negotiated with customers and would offer to sell in-place equipment at specified prices. Existing charges levied by the operating companies for this equipment would be averaged, and the resulting "national price" would be charged by American Bell.

Said to Allow Ethernet Access

Package Out for DEC Systems

CHELMSFORD, Mass. — Interlan, Inc. has introduced a data communications software package for Digital Equipment Corp. RSX-11M and VAX/VMS systems that is said to permit them to communicate over Ethernet, the Xerox Corp. local-area network.

The NS4200 Internet Transport Protocol is said to provide reliable flow-controlled, interprocess communications between systems that reside on either the same Ethernet or on different networks that have been interconnected by a long-haul channel.

Each package is capable of offering a high-bandwidth, virtual-circuit communications service to a user's application task with minimum host CPU loading, a vendor spokesman said.

It contains a menu-driven utility program called Netman that automatically tallies over 40 different network statistical values and enables the network manager to acquire and display information about the operations of the local and remote stations on the network, according to the spokesman.

Netman's parameters also allow a network manager to identify congestion and flow-control bottlenecks, understand traffic flow patterns, evaluate the performance of virtual-circuit connections and assess the quality of the network service.

The package in source form is available for $25,000.

The NS4200 is also available as part of the Ethernode 1000 series, a data communications package that is said to contain hardware (such as a device driver and controller board) and software components required for RSX-11M and VAX/VMS systems to communicate over Ethernet. Ethernode is available in three different configurations ranging in price from $3,335 to $4,435, a spokesman said.

More information is available from Interlan, Inc., 160 Turnpike Road, Chelmsford, Mass. 01824.

Unit Allows Voice, Data Access

MERRIMACK, N.H. — Datavox Communications, Inc. has introduced a multifunction deskset that operates as an IBM 3270-compatible CRT, as an Ascii-teletypewriter data terminal and as an electronic feature phone.

The Datavox-One was designed to be used by corporate professionals as a single workstation that allows access to voice and data information, according to a vendor spokesman. The deskset operates as part of a cluster attached to the Datavox controller.

The deskset can display data as either an IBM Systems Network Architecture (SNA) or Binary Synchronous Communications (BSC) device, emulating an IBM 3278-2 terminal handling two-way communications with an IBM or plug-compatible host computer. The controller operates at speeds from 2,400 to 9,600 bit/sec to support eight desksets or printers at distances up to 5,000 feet, a vendor spokesman said.

Prices for the deskset start at $1,995, for the controller at $2,495; and the asynchronous Ascii option is $1,495. More information is available from Datavox at 6 Continental Blvd., P.O. Box 328, Merrimack, N.H. 03054

Fiber-Optic System Unveiled

WORCESTER, Mass. — Artel Communications Corp. has introduced a fiber-optic computer graphics communications system that is said to transmit high-resolution computer-generated video up to 100 times further than is possible with coaxial cable.

The T/R-2012 was designed for computer-aided design and manufacturing, process control and image applications. The T-2012 and R-2012 are plug-in transmit/receive modules that transmit RS-170 video up to 7,500 feet.

The fiber-optic system bandwidth accommodates either 640 pixels by 512 pixels or 512 pixels by 512 pixels resolution. Both red-green-blue color and monochrome video signals can be handled.

The transmit and receive modules combined are available for $2,150 from the firm through P.O. Box 100, W. Side Station, Worcester, Mass. 01602.

VT108, VT-APL8 Terminals Feature DEC Compatibility

PHILADELPHIA — Human Designed Systems, Inc. has introduced two 132-col. CRT terminals that reportedly combine Ansi X3.64 functionality and Digital Equipment Corp. software.

The VT108 terminal is DEC-compatible and includes four pages of memory standard, 43 programmable functions, windowing and standard DEC VT100 graphics. The Concept VT-APL8 offers 128-char. uppercase/lowercase Ascii with full overstrike, nonvolatile memory, set-up mode and up to four user-selectable character sets.

Both terminals feature communications control symbols, high-resolution, high-quality monitor with etched faceplate for glare reduction, amber phosphor and detached keyboard, a vendor spokesman said.

The VT108 is available for $1,575; the Concept VT-APL8 for $1,750 from the firm at 3440 Market St., Philadelphia, Pa. 19104.

Terminal 3279-, APL-Compatible

SPRINGFIELD, Va. — Renex Corp. has introduced a color terminal that is compatible with the IBM 3279 color and APL terminals.

The R379 terminal is compatible when used with the company's protocol converter, not included with its new product. The terminal features seven colors and an IBM 3279-compatible keyboard, the firm said.

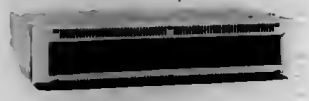
The terminal is available for $3,490 from Renex Corp., Suite 500, 6901 Old Keene Mill Road, Springfield, Va. 22150.

Four-Channel Multiplexer Permits Input Speed Mix

SILVER SPRING, Md. — Rixon, Inc. has introduced a four-channel synchronous multiplexer which is said to permit an intermix of input speeds from 1,200 to 9,600 bit/sec.

The four ports of the DCX725 accept synchronous data and are transparent to the protocol. It provides compacted transmission of up to four channels over a single composite link. The DCX725 is said to eliminate idle time found in conventional time-division multiplexing by dynamically allocating the capacity of the composite link to the four channels, at three user-selectable priorities.

The multiplexer is available for $2,500 from Rixon, Inc., 2120 Industrial Pkwy., Silver Spring, Md. 20904.



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Matrix Printer Targets Scanset

CUPERTINO, Calif. — Tymshare, Inc. has introduced a dot matrix miniprinter for its Scanset line of personal information terminals. The miniprinter is said to be compact and prints at 40, 80 or 136 char./sec.

The Scanset Model 725 also connects to other RS-232C-compatible terminals. When the print button on the terminal is pressed, hard copy is produced on the bidirectional printer within seconds at a speed 120 char./sec, a spokesman for the vendor said.

A built-in graphics mode is said to give the printer a resolution of 144 by 160 dot/sq in. A top-loading paper feeder is included.

The printer is available for $795 from Tymshare, which is located at 20705 Valley Green Drive, Cupertino, Calif. 95014.

Suppressors Out For RS-232 Lines

BALTIMORE — Dymarc Industries, Inc. has announced a series of transient voltage suppressors for RS-232 data transmission lines.

The Series T-25 Clipper was designed for serial operation with a transmission rate from zero to 19.2K bit/sec. The series is said to handle a maximum data signal amplitude of 40V peak-to-peak and has a surge rating of 64A in each direction. Response time is less than 1 nsec, according to a spokesman for the vendor.

The Series T-25 comes with two female, d-subminiature, 25-pin connectors.

The Series T-25-3 protects lines 2, 3 and 7 and costs $135; the T-25-5 protects lines 2, 3, 4, 5 and 7 and costs $181; the T-25-10 protects lines 1, 2, 3, 4, 5, 6, 7, 8, 11 and 20 and costs $299.

Dymarc is located at 21 Governor's Court, Baltimore, Md. 21207.

Report Assesses User's Needs

DRS Calls for Careful Planning: IDC

FRAMINGHAM, Mass. — Implementing a distributed resource system (DRS) today is not as easy as it was a few years ago. Advances in distributed processing techniques are forcing managers to reconsider the ways in which they choose and implement these systems, according to a recent report from International Data Corp. (IDC) here.

Nearly 77% of the total users with access to DRS at top organizations are end users as opposed to DP staff, according to the IDC report. And nine out of 10 of the non-DP users were nontechnical staff.

IDC's findings, contained in "Assessment of User Needs When Planning for a Distributed Resource System," are based on interviews with data processing directors from 25 Fortune 500 companies.

In its study, the research firm determined that the goal of increasing end-user productivity has become the overriding factor in decisions to implement DRS. As a result, the report noted, it is imperative that organizations consult end users thoroughly before planning whether and how to implement DRS. The report added that end users must perceive the benefits of the system to be in their best interest if the project is to succeed.

Most managers interviewed for the report also concluded that end-user training in their companies was inadequate. The study found a three-step training approach to be most effective, integrating conceptual training, general implementation and instruction on specific parts of the technology.

Technology advances have blurred the lines between what has traditionally been called distributed data processing (DDP) and DRS, the survey said. While DDP generally consists of remote processors organized around a central mainframe, DRS

(Continued on Page 62)

Transitional Strategies

FRAMINGHAM, Mass. — There are four basic strategies which can be used to ease the transition of a distributed resource system into a user environment, according to International Data Corp.'s report on "Assessment of User Needs When Planning for a Distributed Resource System." They include:

• *End-user/DP liaison.* Almost every organization surveyed indicated that a person or group who would form a communications line between these two groups is in place or under consideration. The liaison acts as a buffer and often provides consultation and training to solve user problems. In most cases, the liaison reports to the DP manager or performs the function as an adjunct to a different job.

• *Information centers.* These are typically central facilities staffed by programmer/analysts who provide assistance for users seeking program development, the report says. The staff generally assists in any questions end users have. The center also allows users to develop many of their own applications through the use of nonprocedural languages, the survey says. This takes some of the burden off DP departments.

• *Task force management.* These groups, comprised of DP staff and end users, tackle specific problems and suggest solutions. Because the group is heterogeneous, its recommendations usually carry more weight than those of the DP group alone, the report says.

• *User assessment surveys.* This is a straightforward and efficient method of gathering information, including user satisfaction with DP services, attitudes toward automation, needs, user characteristics and allocation of resources. However, a survey requires careful planning to avoid bias and to narrow the response to necessary information. The report recommends that an outside consulting firm conduct the survey.

CDC Cyber 170/825 Enhanced

MINNEAPOLIS — Control Data Corp. (CDC) has announced enhancements to its Cyber 170/825 mainframe computer that are said to improve throughput up to 20%.

The enhancements include a hardware implementation of Compare-Move Unit instructions and improvement in instruction execution time, according to a company spokesman.

The enhanced 825 will be available after Jan. 1. Systems installed prior to that date will be field upgraded at no cost to users, a spokesman said.

The Cyber 825 is an air-cooled machine with 262K words of memory priced at $370,000. The monthly lease price is $8,605 and CDC can be reached through Box O, Minneapolis, Minn. 55440.

MPI Expands Printmate Printers

SALT LAKE CITY, Utah — Micro Peripherals, Inc. (MPI) has announced four wide-carriage versions of its Printmate 150 dot matrix printer. The printers are said to have graphics and font capabilities, optional buffer expansion and high system throughput.

Printmate 150 Models A2 and B2 have standard 16K-byte memory buffers, the company said. Models A1 and B1 have 4K-byte and 2K-byte buffers, respectively, allowing throughput at 150 char./sec.

Models A1 and A2 include the Softswitch front-panel key pad for direct control of forms length, print density, horizontal and vertical tabs, transmission rate and character set.

The company's Ap-Paks software packages run on the system, allowing the user to produce various type styles and graphics as well as to create personalized graphics, a spokeswoman said.

Prices start at $995 from MPI at 4426 S. Century Drive, Salt Lake City, Utah 84107.

Package Controls Color Graphics

NORWALK, Conn. — Data Switch Corp. has announced a color graphics control package for its line of IBM-compatible configuration management systems.

The color graphics capability is available with each operator command console attached to the firm's Data Switch System 1100 and System 1150 Configuration Management System.

Flashing color displays alert the computer operator to problems and unexpected changes in configurations. The status of on-line processors and their peripheral attachments, computer system locations, cross points in a switching matrix, CPU assignments, peripheral types and other information are color highlighted. Color assignments for CPUs and peripherals are determined by the user, the vendor said.

The package costs $12,000; first shipments are scheduled for the second quarter of 1983. The vendor is located at 444 Westport Ave., Norwalk, Conn. 06851.

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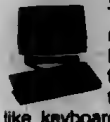

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Lower entry level — The new V-8535-II is a 32-bit processor with cycle time of 112 nanoseconds and a memory of one megabyte. It employs NCR's powerful Virtual Resource Executive (VRX) operating software.

Expanded memory — For most of the enhanced systems in the new series, potential memory is increased from 50 to 100 percent. Maximum memory now ranges from one megabyte for the V-8535-II to eight megabytes for the dyadic V-8595-II.

New dyadic systems — The NCR V-8500-II Series now includes three dyadic systems. Systems that combine symmetrical, tightly-coupled dual processors in a single cabinet. Both processors share all system resources equally with continuous dynamic load leveling.

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Tape Line Debuts From 3M With High-Capacity Reels

ST. PAUL, Minn. — 3M Corp. has announced a new line of high-capacity reel magnetic tapes.

Designated Scotch 703 Black Watch, the tape is packaged with 3,600 feet on a 10½-in. reel and 2,000 feet on an 8½-in. reel, the company said. These capacities are greater than standard tape reel offerings by 50% and 66%, respectively. The product will replace the Scotch 701 Black Watch tape which, the vendor said, is being phased out.

The tape has a textured, conductive substrate that is said to minimize physical damage and increase reliability. The textured backside promotes better tape movement, minimizes lateral slippage and reduces clinching and scratching. The conductive coating helps drain off static charges, a spokesman said.

Prices range from about $20 to $24 for the 2,000-ft reels and from $29 to $34 for 3,600-ft reels from 3M at P.O. Box 33600, St. Paul, Minn. 55133.

Printek Cuts Prices on 900 Printers

BENTON HARBOR, Mich. — Printek, Inc. has reduced prices on its 900 series dot matrix printers "in response to competitive pressures," according to the firm.

The 200 char./sec Model 910 now costs $1,595, a 21% price cut, and the 340 char./sec Model 920 costs $2,395, an 8% reduction. In addition, the Correspondence Print Option and the Electronic Vertical Format Unit with a 6K-byte buffer expansion cost $195 each, a 34% price cut for both. The Parallel Interface now costs $149, a 24% price reduction.

The printers feature multimode printing, data processing, correspondence and graphics, with industry-standard interfaces. Printek is at 1517 Townline Road, Benton Harbor, Mich. 49022.

Power-Line Protector Series Announced

DEER PARK, N.Y. — MCG Electronics, Inc. has announced a series of power-line protectors that are said to provide protection against even a close lightning strike on a power line.

The Surge-Master line reportedly employs two stages of protection: high-speed silicon suppression that reacts within 5 nsec and "brute force" second-stage transient suppression for major transients.

A spokesman said that each phase of the incoming line is protected by three independent heavy-duty suppression modules, so that if one is knocked out, two others continue.

Panel lights indicate the presence of transients and faults, with internal status lights indicating fault locations, the spokesman said.

The units are available for service panels rated from 100A to 3,000A, for 120-, 240- and 480V ac and for single and three-phase power systems. Prices start at $1,692 from the firm at 160 Brook Ave., Deer Park, N.Y., 11729.

Plan Carefully For DRS: IDC

(Continued from Page 59)

provides computer/communications systems at multiple levels that make possible a wide variety of configurations.

Organizations interviewed for the survey said the variety of technology available makes it essential that an organization understand why it needs DRS, what its role is to be in future planning and what benefits are likely to result before proceeding with further planning.

Organizations should build an information model before deciding what kind of DRS to plan, the report concluded. Factors to be considered include geographic patterns, the shape of the organizational chart, the degree of centralization and functions to be performed. External factors should also be considered, the study said. An organization with a highly centralized internal structure may still handle external communications in a highly decentralized manner.

The DRS report costs $4,500 from IDC at Five Speen St., Framingham, Mass. 01701.

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SMS Announces LSI-11-Based Tabletop Micro

The MDX-11 Tabletop Microcomputer

MOUNTAIN VIEW, Calif. — Scientific Micro Systems, Inc. (SMS) has announced a Digital Equipment Corp. LSI-11-based tabletop microcomputer.

The MDX-11 is said to be a complete DEC LSI-11 16-bit microcomputer containing a DEC-compatible Q-bus backplane, which can be configured with the LSI-11/2 or LSI-11/23 CPU. The quad-size backplane can accommodate up to eight dual-height Q-bus cards, the vendor claimed. The system can be configured with 22-bit memory for a total of 1M byte.

The system includes a 5¼-in. Winchester disk drive offering configurations of 10.6M bytes or 15.9M bytes of formatted storage. The MDX-11 reportedly also contains a double-sided, double-density slim line floppy disk. The controller is said to allow automated recognition of DEC floppy formats RX01, RX02 and RX03 and IBM 3740 and 2/2D.

The system can be suppled with RT-11 or RSX-11M distribution, a spokesman said. The MDX-11 includes self-test capabilities allowing isolation of problems down to the module level. Stand-alone installation and test software allow dynamic testing.

The price for the 10.6M-byte version without DEC CPU and memory is $6,900, the spokesman said from 777 E. Middlefield Road, Mountain View, Calif. 94043.

Fujitsu Micro 168 Targets U.S. Micro Marketplace

SANTA CLARA, Calif. — Tokyo-based Fujitsu, Ltd. has jumped into the U.S. personal computer marketplace with the Micro 168, which incorporates both an 8-bit and a 16-bit microprocessor.

The unit was designed to operate under both 8-bit and 16-bit versions of Digital Research, Inc.'a CP/M operating system. Fujitsu said the processor can handle most small business accounting functions, taking advantage of about 3,000 existing CP/M programs.

The unit can also perform word processing, order entry, invoicing, inventory control and electronic spreadsheet functions, the vendor said.

The Micro 168 uses an 8-bit Zilog Corp. Z80 microprocessor and an Intel Corp. 8088 16-bit microprocessor. The Micro 168 comes with two 5¼-in. floppy disk drives, each offering 320K bytes of formatted storage. For applications requiring more disk storage, an optional 10M-byte hard disk drive is also available, the vendor said.

The unit comes with 128K bytes of main memory that is expandable to 1M byte. In addition, the processor is equipped with both parallel and serial I/O ports and a high-resolution color graphics capability, the vendor said.

The Micro 168 costs about $4,000 including the CP/M-86 operating system, word processing package and electronic spreadsheet package. Deliveries are scheduled to begin in February, the vendor said.

The Micro 168 will be distributed through Fujitsu's Professional Microsystems Division. The unit will also be sold through unspecified independent retail sales outlets. Fujitsu is located at 2985 Kifer Road, Santa Clara, Calif. 95051.

Onyx Unveils Stand-Alone, 16-Bit Micros for Unix III

SAN JOSE, Calif. — Onyx Systems, Inc. has introduced an integrated computer/workstation and two 16-bit microcomputer systems that run on Bell Laboratories' Unix System III.

The Sundance 16 computer/workstation is available in two models, both Digital Equipment Corp. VT100-type, one with 132 columns and one with 80 columns. Winchester disk storage reportedly ranges from 7M to 21M bytes, memory from 256K to 512K bytes, and both have 12M-byte backup tape. Supporting up to five users, the system starts at $12,990.

The 16-bit C5002A features the same storage capabilities and supports up to five users with its five serial ports and one parallel port. Prices start at $10,990.

The C8002A features an 8-in. Winchester disk with 20M-, 40M- or 60M-byte storage, 256K- or 512K-byte random-access memory and a 12M-byte tape backup. The system supports up to five users and has an internal upgrade option that supports 11 users and devices. Prices start at $13,990.

Onyx Systems is located at 25 E. Trimble Road, San Jose, Calif. 95131.

Microfazer Boosts Printer Efficiency

NORCROSS, Ga. — A 512K-byte microcomputer printer memory board said to increase simultaneously microcomputer output speed and printer efficiency has been unveiled by Quadram Corp.

Microfazer reportedly allows both printing and computing to occur simultaneously. The unit is an in-line memory said to turn a "dumb" printer into a "smart" printer with a 8K- to 512K-byte random-access memory.

The Microfazer line can be used with most microcomputers, both serial and parallel, according to the vendor spokesman. For the parallel-to-parallel models, prices are: $169 (8K bytes), $189 (16K bytes), $225 (32K bytes), $299 (64K bytes), $445 (128K bytes), $895 (256K bytes) and $1,395 (512K bytes).

Serial-to-parallel and parallel-to-serial models cost: $199 (8K bytes), $220 (16K bytes), $260 (32K bytes) and $330 (64K bytes). Serial-to-serial models are priced at: $229 (8K bytes), $249 (16K bytes), $279 (32K bytes) and $330 (64K bytes). Quadram is located at 4357 Park Drive, Norcross, Ga. 30093.

Enhanced CP/M-Based Fox Bows

OAKLAND, Calif. — Digital Microsystems, Inc. (DMS) has introduced an enhanced version of its Digital Research, Inc. CP/M-based Fox portable computer, reportedly featuring 15M bytes of built-in formatted Winchester disk storage.

The stand-alone DMS-15 reportedly also can serve as the master station in the company's Hinet local-area network. The unit includes a Zilog, Inc. Z80A-based processor with 64K bytes of random-access memory; a 9-in. CRT; one 5¼-in. double-sided, double-density, 614K-byte floppy; the network interface; and four RS-232C serial ports.

The DMS-15 reportedly makes it possible for users with large data bases to take advantage of both single-user microcomputer technology and CP/M-based software, a spokesman for the vendor said. Typical applications include inventory tracking, large legal and library data bases and comprehensive mailing lists, the spokesman said.

The unit has 30 programmable function keys that allow users to reduce repetitive word processing sequences or log-in and password procedures to single keystrokes, he added.

Available after Dec. 15, the DMS-15, including CP/M 2, costs $7,495. The software needed to run the system as a Hinet master station costs an additional $500. Quantity discounts are available.

DMS is located at 1755 Embarcadero, Oakland, Calif. 94606.

Retail Price Cut 17% on ACE 1000

PENNSAUKEN, N.J. — Franklin Computer Corp. has reduced the retail price of its ACE 1000 personal computer to $1,330 from $1,595.

The ACE 1000 reportedly is fully compatible with the Apple Computer, Inc. Apple II computer. The compact computer includes both upper and lower case characters, a 72-key typewriter-style keyboard, a 12-key numeric pad and 64K bytes of random-access memory. It can accommodate Digital Research, Inc. CP/M-based programs, as well as Visicorp's Visicalc forecasting software, a spokesman said.

The ACE 1000 is available from Franklin at 7030 Colonial Highway, Pennsauken, N.J. 08109.

Single-Board Processor Fits DEC's PDP-8 Mini

HOUSTON — Computer Extension Systems, Inc. has announced CPU8, a single-board processor said to be compatible with Digital Equipment Corp.'a PDP-8 minicomputer.

PDP-8/A users can upgrade to the equivalent of a PDP-8/E model by installing the CPU8. The unit reportedly increases computer speed by 25%.

The unit costs $995, the vendor said from 17511 El Camino Real, Houston, Texas 77058.

Includes Adaptable Hardware, Software

Advertising Turnkey Introduced

MEMPHIS, Tenn. — General Data Consultants, Inc. has introduced an automated advertising agency management support turnkey system said to include adaptable hardware and software for any agency application.

The Agency Advertising Management System is based on Data General Corp.'s Commercial Systems line of hardware and handles traffic, billing, sales and accounting functions, according to the vendor. The system can reportedly perform jobs-in-progress tracking, detailed media time and space billing to cost accounting by client and sales analysis by account executives.

The system is base priced at $22,690, including software and hardware. Additional information can be obtained from General Data Consultants at 606 S. Mendenhall at Poplar, Memphis, Tenn. 38117.

Percom Disk Subsystem Debuts for Atari Processors

DALLAS — Percom Data Corp. has announced a disk subsystem for Atari, Inc. processors.

Called the Percom Data AT-88, the unit is compatible with the Atari 400 and 800 microcomputers. The unit includes a single-density disk drive offering 88K bytes of formatted storage. The unit has its own integrated power supply and can use Atari's operating system without modification, the vendor said.

The AT-88 costs $488. The firm also announced it has lowered the price for its double-density disk drives for the Atari processor from $799 to $699 each. The firm is located at 11220 Pagemill Road, Dallas, Texas 75243.

Two Band Printers Bow For System/34, System/38

TUSTIN, Calif. — Ampak Business Systems, Inc. has announced two band printers for IBM System/34 and System/38 computers.

The ABS 300 BP is described as a 300 line/min band printer with a 64-char. band. The ABS 600 BP is a 650 line/min printer, also with a 64-char. band.

Both printers are said to offer built-in diagnostic display, long-life ribbon cartridges and operator interchangeable steel bands.

The ABS 300 costs $7,495, and the ABS 600 costs $9,250 from Ampak Business Systems at 2640 Walnut, Tustin, Calif. 92680.

DTC 380Z Printer Terminal Features 48K-Byte Buffer

CAMPBELL, Calif. — A daisywheel printer terminal said to be software-compatible with the Diablo Systems, Inc. 1640/1650/630 has been announced by Data Terminals and Communications, Inc. (DTC).

The DTC 380Z reportedly features 48K-byte buffer memory and up to 32 char./sec letter-quality bidirectional printing. Other features include serial and parallel interfaces, 50- to 19.2K bit/sec data transmission and self-diagnostics, according to the firm.

The unit costs $1,199 from DTC at 590 Division St., Campbell, Calif. 95008.

Monitor Debuts for Micros

NEWTONVILLE, Mass. — A touch-sensitive CRT monitor for use with personal computers, including those from IBM and Apple Computer, Inc., has been announced by Interaction Systems, Inc.

The Model TM-120's 12-in. green phosphor screen provides 32 touch-sensitive regions and can display 25 lines of data. An RS-232 serial line connects the monitor to the computer.

The monitor costs $1,295 from 24 Munroe St., Newtonville, Mass. 02160.

IEEE Board Introduced For S-100s

LAWNDALE, Calif. — Computime has announced an IEEE-696 S-100 bus board for 8-bit S-100 systems. Called the CT256-1, the board is said to support 64K bytes to 256K bytes of memory using 64K-bit dynamic random-access memory (RAM) chips, and 256K bytes to 1M byte using 256K-bit dynamic RAM chips.

Other features reportedly include 24-bit addressing, phantom mode and parity error trap options.

A board containing 256K bytes of RAM costs $750, according to a spokesman. Computime is located at 8614 Hamilton, Huntington Beach, Calif. 92646.

Data Processing Units Out For Telephone Management

BENTON HARBOR, Mich. — Digital Interface Systems, Inc. has announced three telephone management data processing units.

Called the OS 1000, OS 2000 and OS 3000, the basic units utilize 16-bit Texas Instruments, Inc. microcomputers with up to 256K bytes of memory and up to 29.2M bytes of storage, a spokesman said. Standard configurations include RS-232 ports for intelligent private branch exchanges and a user interface through keyboard send/receive or CRT terminals and printers.

The OS 1000 uses a floppy disk and can store 20,000 calls. The OS 2000 and OS 3000 use Winchester disks to store up to 200,000 and 400,000 calls, respectively. Storage on all systems is expandable.

Single unit prices range from $7,200 for the OS 1000, not including peripherals, to $24,000 for the OS 3000, including peripherals. Volume discounts are available from 2390 Pipestone Road, P.O. Box 1408, Benton Harbor, Mich. 49022.

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CW Photos by J. Bartimo

Diane Nesline, a receptionist at Software Arts, Inc., checks her electronic mail.

Robert Frankston, president of Software Arts, Inc., displays wiring that allows 88 terminals to tap into the company's local-area network.

Home-Grown Electronic Mail Provides Intercorporate System

By Jim Bartimo
CW Staff

WELLESLEY, Mass. — With electronic mail going to everyone within the company and many outside the company, "I don't know what it's like to write a message on paper anymore," said Robert Frankston, president of Software Arts, Inc. here.

There are two reasons why Software Arts (the creators of the spreadsheet software for microcomputers, Visicalc) dove head first into office automation with a Xerox Corp. Ethernet local-area network from Ungermann-Bass, Inc. One is to give the company's employees more time to be creative; the other is to stay on top of the automated office in order to know what software products will be needed, according to the company's vice-president of operations, Tracy Licklider.

"The biggest problem in the industry is connectivity," Frankston said in a recent interview here. "Right now, you can't connect micros to anything easily."

But with home-grown electronic mail software, the employees can communicate with all other employees in the building, the U.S. Postal Service's Electronic Computer-Originated Mail, third-party electronic mail providers such as Compuserve, Inc. and outside businesses such as the company's law and public relations firms. "We have a true intercorporate mail system," Licklider said.

The completeness of the mail system starts with top management and reaches to the errand boy who keeps the office refrigerator stocked with soda and juice. Some staffers have terminals at home that communicate with the network through dial-up lines and modems. "If I write a memo on Friday afternoon, I don't have to wait until Monday before it's acted upon," Frankston said, "Chances are that person will have checked his mail over the weekend at home."

The wealth of information available on the mail system includes personal schedules and company reports. "I can look at the building maintenance report whenever I want by hitting a key," Frankston said. "Before, you'd have to keep reminding people to include you on the distribution list."

With memos, schedules and reports online, is there a possibility that users, especially managers, will become overloaded with information? Frankston said no, citing that "people don't feel obligated to write 30-page memos. Memos are a less formalized process now."

Despite this statement, Frankston turned to his terminal and quickly typed responses throughout this interview as the bell indicating a new message had been received rang at approximately five-minute intervals.

Frankston said that his company chose the Ethernet local-area network because it was the most available method at the time to tie dissimilar equipment together. "We needed something that could tie anything to anything," he said. "The nice thing about Ethernet is that you can just throw on a gateway."

The major disadvantage of using extensive electronic mail on Ethernet is lack of security. "If a programmer gets mad at us," said Software Arts employee and MIT professor, David Reed, "we have no control over him sending out [our data]."

Frankston said he takes the optimistic view of office automation, pointing out that there are two ways to use the new technology.

"One is to make people more creative by giving them more time," he said, "the other way is to chain people to their desks. You could use it to monitor people's productivity and fire them if they take a five-minute break. But, my feeling is that anyone who does that will go out of business."

Software Arts uses three Prime Computer, Inc. 850 minicomputers for its office automation duties with 8M bytes of storage each and 1.6G bytes of disk storage. Some 88 terminals can connect to the system and some 100 microcomputers are used for testing and programming new versions of the company's newest micro software package, TKsolver, he said.

The software allows for the integration of word and data processing, Frankston said, with no commands necessary to switch from one mode to the other. "You cannot survive with two different channels," Licklider said, "it's just an historical mistake that they developed separately."

Software Arts has no plans to market the electronic mail package at present, but a screen editor developed in-house was sold to Prime, Frankston said.

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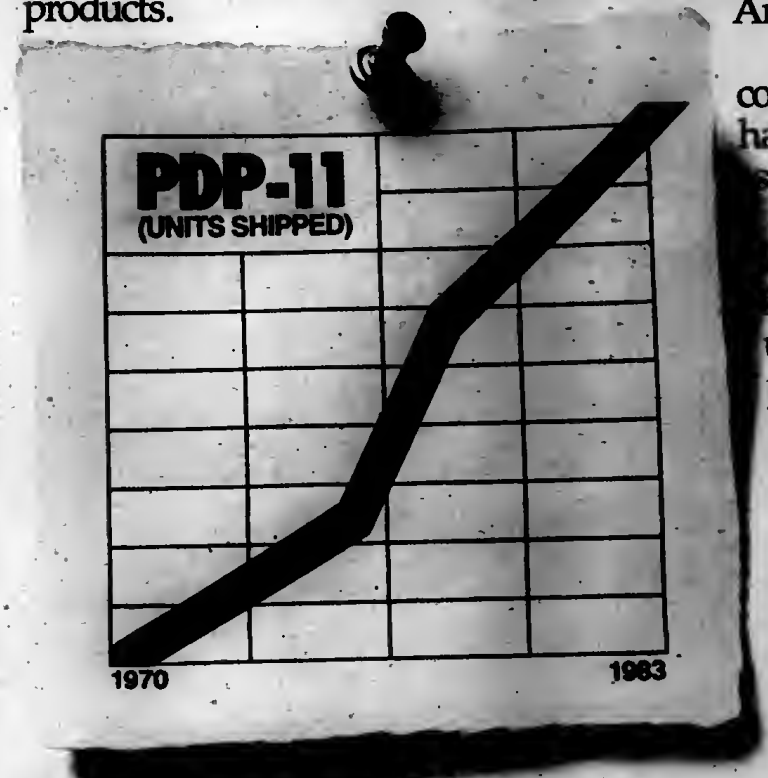

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Financial Planning Tool Out for Wang OIS Line

SPOTSWOOD, N.J. — Desk Top Financial Solutions, Inc. has introduced a financial planning package for the Wang Laboratories, Inc. OIS family of word processing computers. It was designed to offer business activity forecasting to controllers, accountants, consultants and sales managers.

The Desk Top Financial Planning System (DT/FPS) also offers the ability to track and report results and create detailed financial plans using large data bases. A financial planning language is integrated into a file-oriented data base management system, which can hold up to 450M bytes of data, a vendor spokesman said.

DT/FPS costs $7,500 from Desk Top at 407 Main St., Spotswood, N.J. 08884.

Plus Ethernet Components

DEC Offers Shielded EIA Cables

MAYNARD, Mass. — Digital Equipment Corp. has unveiled a series of fully shielded EIA cable assemblies and announced the first availability of physical-channel Ethernet components.

The shielded cables, designated BC22D, BC22E and BC22F, are RS-232-type cables with six, 16 and 25 conductors, respectively. They are available in standard lengths, ranging from 10 to 250 feet. They accept a non-intrusive tap from the H4000 transceiver. Prices start at $45.

The physical-channel Ethernet components are the H4000 Ethernet transceiver, Ethernet cable and interconnect accessories. The transceiver provides a functional interface between an Ethernet station and coaxial cable.

The H4000 costs $300, DEC said from Maynard, Mass.

WP Package Targets IBM Series/1

BARRINGTON, Ill. — Management Kinetics International, Inc. (MKI) has introduced a word processing package for the IBM Series/1 with the EDX operating system.

Word/Manager is said to utilize the IBM text editors that allow any number of local or remote users to create, store, retrieve and modify documents. Extensive variable insertion facilities are provided, which include a user exit. The user exit enables the merging of information from existing data files into the documents, producing personalized mass mailings, label production and report generation.

The package is available for $2,150 from MKI, 126 S. Northwest Highway, Barrington, Ill. 60010.

Scribe Fits Workstation

PITTSBURGH, Pa. — Unilogic, Ltd. has introduced a text processing and document production system for the Apollo Computer, Inc. personal workstation.

Scribe is said to specialize in the production of reports, manuals, proposals, specifications and book-length manuscripts. Features include merging text with graphics, producing color slides and automatically creating indexes, bibliographies and tables of contents. It is able to drive more than 50 printing devices from line printers to robot typewriters and laser printers.

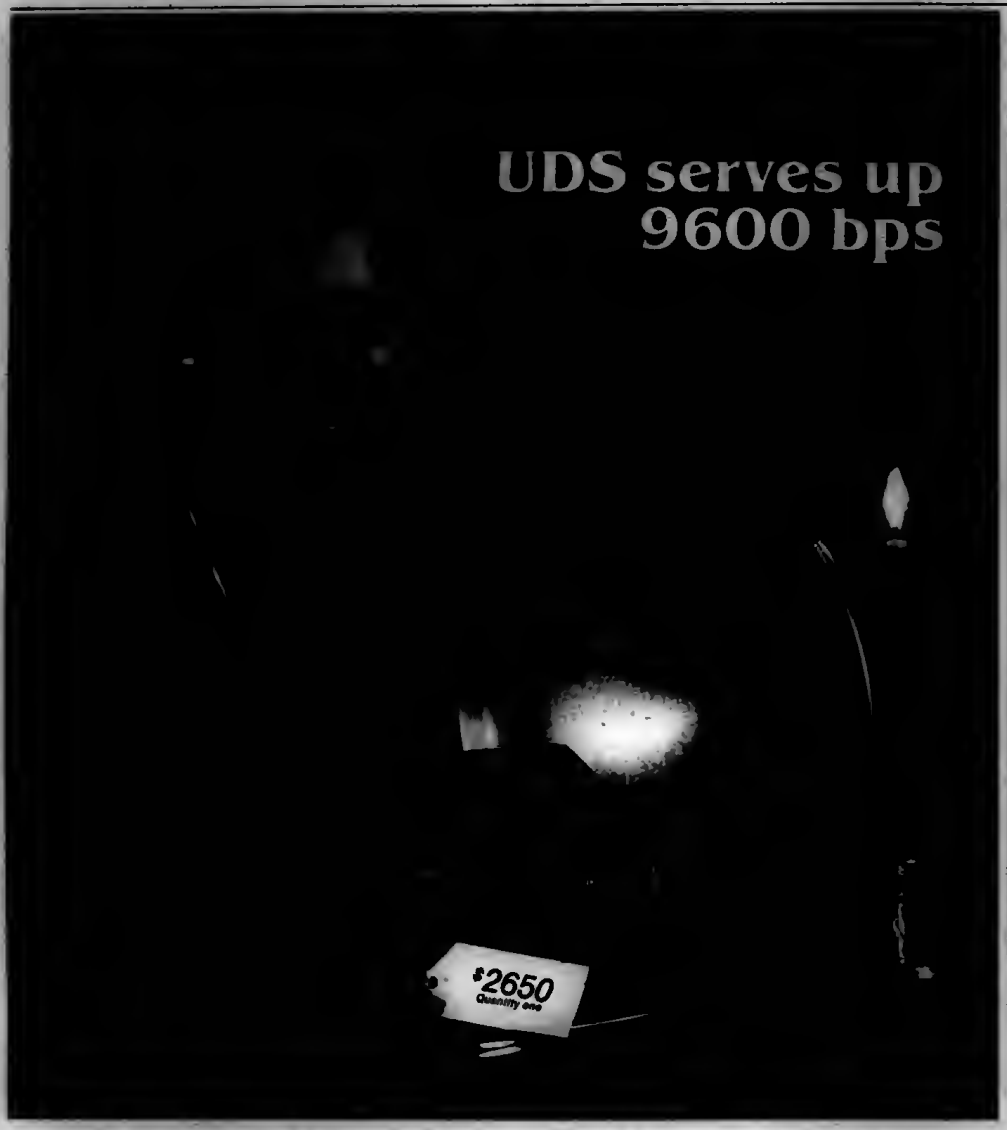
Scribe is available for $5,000 for the first node and $1,000/additional node from Unilogic, 160 N. Craig St., Pittsburg, Pa. 15213.

Printer Runs At 45 Char./Sec

NEW YORK — Primages, Inc. has introduced a letter-quality daisywheel printer that runs at 45 char./sec.

The Image I can print special accents and characters of any Roman alphabet language, the vendor said. Among the interfaces available is the RS-232.

The printer costs $1,650; a sheet feeder costs $275. Primages is at 620 Johnson Ave., Bohemia, N.Y. 11716.



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Distributed DP Leads Analysts To Look Closer At Local Nets

By Robert Batt
CW West Coast Bureau

The growth of distributed processing among large corporations and financial institutions is leading some industry analysts to take a closer look at the local network market.

While linking micro devices in a local-area network environment is nothing new, the potential for linking mainframes of different manufacturers together has remained relatively untapped, analysts contend.

Now, industry observers say, the communications market is poised for rapid expansion, with IBM in the vanguard. Within the next six months IBM is expected to announce an Establishment Communications Link, which will essentially constitute the company's local-area network and communications architecture. The aim of the architecture is to facilitate communications within already established offices, office buildings and business practices.

According to George Colony, senior analyst at the Yankee Group, the first of a series of developments will be the announcement of a third-party attachment to the communications link, which will minimally give third parties the capability of passing packets on the local network.

Yankee Group analysts say the IBM network will go beyond the current concepts of local networks as offered by Xerox Corp.'s Ethernet and Wang Laboratories

(Continued on Page 70)

Revenue Slide Predicted

Amdahl's Fate Rests on 5860 Shipments

By Bill Laberis
CW Staff

SUNNYVALE, Calif. — As go shipments of its 5860 processors, so goes the financial fate of Amdahl Corp.

And those shipments will not occur in volume before year's end, meaning that revenues and earnings for the plug-compatible manufacturer will slide again in the fourth quarter relative to the same period last year, as they have the previous two quarters.

Moreover, company officials speaking before industry analysts here recently said they see no major improvement in the economy, and therefore in business, until the second half of 1983.

By that time, however, management said they'll be looking for "record net income," and will be beefing up the sales force to achieve that end.

John C. Lewis, Amdahl's president, attributed the company's relatively bleak revenue and profit picture throughout 1982 to "the continuation of exchange rate deterioration, high unit costs in the early phase of new product production, lower prices and higher leasing activity on our mature products."

Further, delays caused by problems in meeting published performance benchmarks confine shipments of the new 5860 processor to no more than 20 units this year. Meanwhile, the market presence of used IBM 3033 processors placed downward pressure on prices of Amdahl's 470 line of processors, Lewis said.

"But volume shipments of the 5860 will occur in the balance of this year, while we expect that the demand for the processor, product cost reductions and the introduction of new communications and storage products will be sufficient to realize substantial improvements in revenue and earnings in 1983," Lewis offered the analysts.

Production Mode Shift

Eugene R. White, Amdahl's chief executive officer and board chairman, said the company will discontinue manufacture of the 470 line in mid-1983, as the production mode shifts to the 5860. By this time, Amdahl hopes to begin delivery of its 470 extended architecture, designed to support the functions of IBM's MVS/SP Version 2 Release 1 and data management facilities, collectively known as MVS/XA.

Shipments of the company's XA product will avert a return en masse to Amdahl of used 470s, White speculated, suggesting that there may be some user hesitancy about the company's XA package as no such packages have been installed to date.

Commenting on the 5860's ability to compete effectively with IBM's 3084 processors, Lewis characterized IBM's recent introduction as "a harried

(Continued on Page 70)

Industry's Favorite Pastime

CDLA Ponders IBM Policies

WHITE SULPHUR SPRINGS, W. Va. — Wondering what IBM is up to has become a favorite pastime of the DP industry. That is especially true for IBM's major customers, the third-party leasing firms making up the Computer Dealers and Lessors Association (CDLA).

As is usual when the association membership gathers, the CDLA's annual meeting here earlier this month paid considerable attention to IBM. In particular, the CDLA member firm executives tried to analyze the ramifications of IBM's recent price changes and its offering of new long-term leasing plans.

George Heilborn, president of IPS Computer Marketing Corp. in Paramus, N.J., saw the IBM moves as "experimentation" by the industry giant, which, Heilborn explained, is seeking new ways of marketing its products to meet changing and evolving DP market conditions.

But the new IBM leasing arrangements, even though offering rates competitive to those of third-party lessors, will not drive leasing firms out of business because they generally have more flexibility than IBM in packaging lease deals, he said.

(Continued on Page 86)

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Distributed DP Spurs Net Analysis

(Continued from Page 69)

Inc.'s Wangnet. They further predict IBM will use its Systems Network Architecture (SNA) to establish a local network that goes beyond the physical and data link control level to encompass higher level protocols. This, they claimed, would enable users to have tighter network control over functions such as maintenance and financial monitoring.

"The market is going to change dramatically in the next few years, and there will be readily available high-speed CPU-to-CPU communications systems. SNA itself is going to evolve and change in conjunction with the Establishment Communications Link because of the peer-to-peer requirement of a local network as opposed to the master/slave requirement of traditional SNA," Colony said.

Analysts agreed that IBM cannot introduce a local network protocol without also introducing interface devices that will allow communications with other devices in the local net. As one analyst said, "An IBM gateway box linking IBM mainframes to the local network environment will need to be introduced at the same time."

Plug-compatible vendors, Colony said, will enter the communications business by the mid-'80s, for example, offering communications protocols between intelligent 3270s, 3274s and SNA networks. "The work currently being done by plug-compatible manufacturers (PCM) to give their systems an SNA capability will have to be redesigned. Any third party wishing to attach a system to the network will have to possess some intelligence to run bridges to higher level protocols."

Non-PCM mainframers will also have to respond to IBM's moves, analysts said. Kenneth Bosomworth, president of international Resource Development, Inc. of Norwalk, Conn., explained that "the motivation of companies such as Honeywell, Inc., Control Data Corp. and Burroughs Corp. is more focused on preventing users from leaving their product families. Their future is tied to their ability to keep their customers locked in and anything the customer does to unlock himself is a threat to their survival."

The time may soon arrive, he argued, when it becomes much more commonplace to transfer large data files from one location to another. "Optical disk-based, large data bases, not connected to any particular mainframe may be only two to four years away."

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Firm's Fate Tied to 5860

(Continued from Page 69)

way to carry coal to Newcastle," claiming the four-way multiprocessor "makes for a tough environment to work within."

Turning to the storage market Amdahl entered in September with its line of Fujitsu Ltd.-manufactured 6000 series storage systems, Lewis announced that Amdahl will begin marketing the 6000 series outside the company's existing base. The intent, he said, is both to raise revenues while attracting more users into the Amdahl fold.

Otherwise, company officials said Amdahl will announce a new operating system for time-sharing networks "sometime in next year."

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U.S. Needs to Respond to Japanese Push

Reports Urge Joint U.S. Supercomputer Project

By Robert Batt
CW West Coast Bureau

U.S. industry, government and academia should together launch a project to advance supercomputer development in response to a similar project recently initiated in Japan.

This is the primary thrust of two reports, one prepared by computer scientists from the Lawrence Livermore National Laboratory in Livermore, Calif., and the other from the Los Alamos (N.M.) National Laboratory.

The Livermore report noted that the Japanese already have an ongoing government-sponsored, industry-organized supercomputer project. Japan's intent, the report states, is to build the world's largest supercomputers and become a viable force in a market historically dominated by U.S. mainframers.

According to the Los Alamos scientists, the large-scale computing systems currently offered by Japanese manufacturers are approaching the best available in any market. For example, it cited the Hitachi, Ltd. M280H IAP as competitive with Control Data Corp.'a Cyber 205, while Fujitsu, Ltd. manufactures an array processor — the Facom-APU — believed to equal the Cray Research, inc. Cray-1 in some performance areas.

Successors to these Japanese systems are already on the drawing board, the Los Alamos report said. "We believe that the National Super-Speed Computer Project will produce a supercomputer, and the chances are good that it will achieve a significant performance increase over existing computers."

The Livermore report argues that the U.S. Department of Energy, (DOE) one of the biggest users of supercomputers in the U.S., should address the question, "What if the best supercomputer available is not domestically made?" Supercomputer architectures, it explained, require considerable research in software-related areas, such as parallel algorithms and high-level languages. The DOE, the report recommended, should increase its funding of work in this area and also explore joint research with the Japanese.

"The Japanese government supports the placement of state-of-the-art supercomputers in their universities. Compared to many European and Japanese universities, our U.S. colleges are 'computer poor.' A program for the sponsorship of university supercomputers is needed in this country," the Livermore report adds.

According to Los Alamos scientists, the Japanese supercomputer project will run through 1989, the purpose of which is to produce a supercomputer 1,000 times as powerful as any now available. Its specifications include:

- Execution rate of about 10 billion floating-point operations per second.
- 1G bytes of main memory.
- A 1.5G-byte memory bandwidth.
- Distributed parallel-processing architecture.

"Execution of the project requires fundamental advances in device technology, architecture and algorithms," the Los Alamos report said. It adds: " The Japanese forsee a need for large-scale computing capability in such areas as nuclear fusion, image analysis for the Earth Resources Satellite, meteorological forecast, electrical power system analysis, structural analysis of satellites and very large-scale integration design and simulation technology."

All six major Japanese computer vendors — Fujitsu; Hitachi; Nippon Electric Co.; Mitsubishi Electric Corp.; Oki Electric Industry Co., Ltd; and Toshiba Corp. — are participating in these efforts. in addition to the national projects, the report said there are proprietary supercomputer or supercomputer-related projects at some of these companies that will advance the Japanese supercomputer technology base.

Itel Files Plan To Reorganize

SAN FRANCISCO — A one-time darling of the computer leasing business has filed an amended plan of reorganization and a proposed disclosure statement describing how the amended plan would affect the company, its creditors and security holders.

Attorneys for Itel Corp., whose star abruptly dimmed when IBM introduced its 4300 line of CPUs, will appear in U.S. Bankruptcy Court here next month for a hearing on the proposed disclosure statement. Until 1980, Itel was a leading lessor of IBM 370s, but wrote many of its leases with optional cancellation clauses.

Meanwhile, the company, which is now operating as a debtor-in-possession under Chapter 11 bankruptcy statutes, announced a 9% revenue decline for the third quarter of 1982. Revenues fell to $44 million as compared to $49 million in the third quarter of 1981, while net income rose 100%, reflecting sizable gains from interest income. The company began accumulating cash in 1980 when it stopped making principal and interest payments on its unsecured debt.

Itel returned to the DP market in September with the creation of Itel Software Systems, through which the company will market software throughout Europe.

Nickels & Dimes

Cullinane Database Systems, Inc. later this month will make a public offering of 550,000 shares of common stock, the company has announced. Terms of the offering have not yet been determined and any offering will be made only via a prospectus, the company said.

$ $ $

Ultimate Corp. of Clark, N.J., has filed a registration statement with the Securities and Exchange Commission relating to a public offering of 1.2 million shares of common stock. E.F. Hutton & Co., Inc.; Montgomery Securities; and Rooney, Pace, Inc. have been designated as joint managers of the underwriting group.

$ $ $

Corona Data Systems, Inc. of Westlake Village, Calif., has received a $500,000 unsecured line of credit from the Wells Fargo Bank.

$ $ $

Quantum Corp. has filed a registration statement with the Securities and Exchange Commission for its initial public offering of 1.7 million shares of common stock, of which 1,250,000 are being offered by the company and 450,000 shares by certain shareholders. The offering is expected to be made in December and will be managed by Morgan, Stanley & Co., Inc. and Robertson, Colman, Stephens & Woodman.

$ $ $

Analog Devices Enterprises, Norwood, Mass., has joined Standard Oil Co. of Indiana and a venture capital consortium headed by First interstate Capital of Los Angeles in providing $8 million in second-round financing to **Gigabit Logic, Inc.** of Culver City, Calif.

$ $ $

Shareholders of Rand Information Systems, Inc. have approved a one-for-three reverse stock split, a change in authorized common stock and a stock option plan for key employees. Shareholders also approved a plan for the firm's Employee Stock Ownership Trust to purchase up to 650,000 shares following completion of the stock split.

$ $ $

Software Applications, Inc., formerly Stephen A. Selznick, Inc., has recently completed a public offering of an undisclosed amount of stock.

$ $ $

Honeywell, Inc. has sold $100 million in 11⅛% notes, due Nov. 1, 1992, to Morgan Stanley & Co., Inc. The notes are the first part of a $150 million shelf registration of debt securities filed last month with the Securities and Exchange Commission.

$ $ $

Dynatech Corp., Burlington, Mass. has signed a $15 million, seven-year multicurrency revolving credit and term loan agreement with the First National Bank of Boston.

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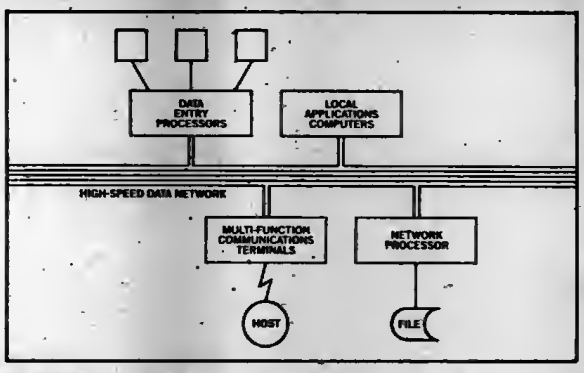

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— — —

The University of Lowell, Mass., the University of Massachusetts at Amherst; Cornell University; and the University of Minnesota are the recipients of a total of $1,200,000 in computer equipment donated by Data General Corp. The systems will be used by undergraduate and graduate students for educational and research purposes.

— — —

Honeywell, Inc. and Data Terminal Systems, Inc. have signed an agreement to develop and market a computer system for drug stores that will combine pharmacy automation with point-of-sale control for front-of-store retail operations.

— — —

Data-Sud Systemes of Montpellier, France, a consultant in the design and development of microprocessor-based systems for industry, has established a U.S. subsidiary, Data-Sud Systems/U.S., Inc., in Tempe, Ariz. The subsidiary will market the firm's microprocessor software and Exorcisor bus-compatible and VME bus-compatible board products.

— — —

University Computing Co. introduced its UCC Eight management support system at its first systems software user conference for European clients held in London in mid-October. The system, which has been marketed in the U.S. for over a year, was designed to assist data managers in problem management, change management and resource management.

— — —

Cray Research, Inc. has shipped its 50th supercomputer, a four-million-word Cray-1S system, to Los Alamos National Laboratories, N.M., which, coincidentally, was the recipient of Cray's first supercomputer in 1976.

Dataram Corp.'s manufacturing facility in Cranbury, N.J., will close for eight working days at the end of December due to continued losses in revenues. Although the company's revenues were higher for the second quarter than for the first quarter of 1982, they still fell below earlier projections.

— — —

Digital Equipment Corp. has opened an engineering service center equipped to demonstrate practical applications of its VAX-11 systems and a variety of peripherals, display devices and interactive software for computer-assisted engineering, design and manufacturing. The center, located at Suite 101, 2620 Augustine Drive, Santa Clara, Calif., is also intended as a service center for professional engineers and engineering managers and is available to run application benchmarks as well as problem solutions and modeling applications.

— — —

Philip O. Deputy, founder of Petroleum Data Corp. (Petrodata), has formed a new company based in Princeton, N.J. that has acquired all of Petrodata'a IBM minicomputer product-related assets and is acquiring a license to remarket IBM microcomputer software for petroleum distributors. The new firm has been named Petroleum Software & Systems, Inc.

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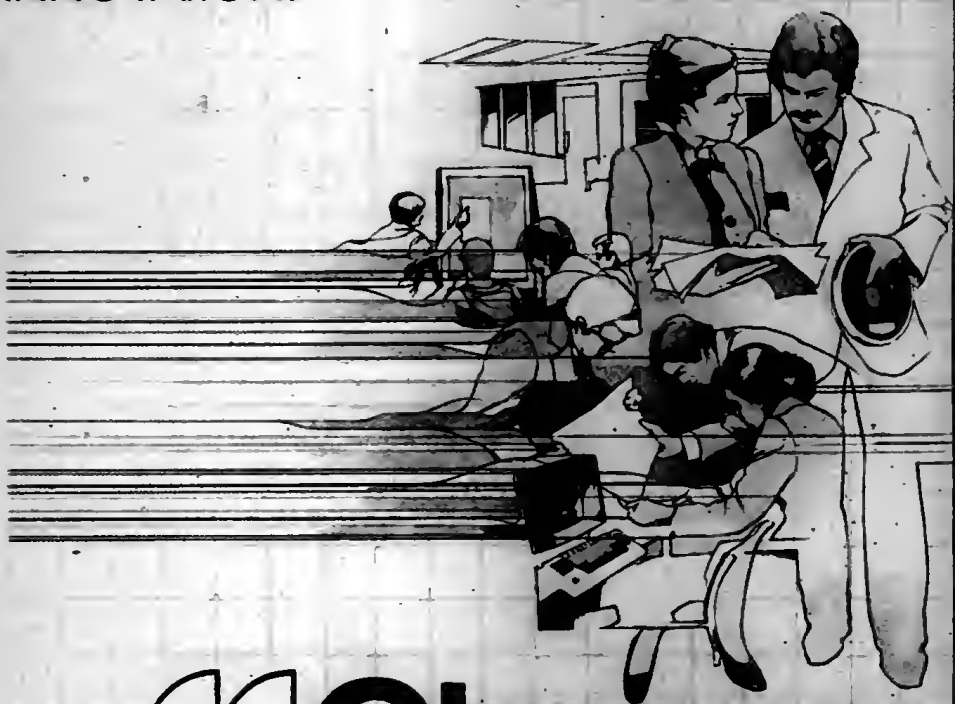

Cincom®

Partnership Helps School Beat Cost of DP Profs

By Robert Batt
CW West Coast Bureau

ELSAH, Ill. — What does a small liberal arts college do when it doesn't have the resources to attract top-notch computer science graduates to teach its students?

One college that thinks it has found an answer is The Principia College, based here.

Facing a continued loss of qualified computer science teachers to the more lucrative world of industry, David Pfeiffer, director of the Office of Special Programs at Principia, decided the time had come to take a more radical approach.

Radical Approach

Pfeiffer entered into a partnership with the Cibar Systems Institute, Inc., part of Cibar, Inc., a DP consulting firm in Colorado Springs, Colo. As a result, students at Principia now travel to Colorado to take part in a program called the Off-Campus Major Program.

"We entered into an agreement with Cibar because at the levels of pay available at a small liberal arts college we could not keep highly qualified computer science teachers and we were losing quite a few to industry," Pfeiffer said.

"In addition, as a teaching institution it is difficult for us to keep abreast of technological advances and afford the sophisticated hardware needed to put on first-class courses, and so we went to a consulting firm," Pfeiffer said.

Pfeiffer asserted that Cibar was chosen because it offered a course that had a strong conceptual base where the skills taught were transferable from the language to another and from one manufacturer to another.

"The impression I have is that most of the courses offered by computing companies are an attempt to tie the student into that company's hardware and software. The off-campus program is taught in a generic way and it is that kind of conceptual base which we find attractive," he said.

The off-campus program consists of courses such as operating system functions, program testing and maintenance, compilers and the structure of systems.

Program Structures

In a course titled "Introduction to Programming: Program Structures," students use Warnier, Jackson and Myers techniques to establish program structures.

"As would be needed in the business world, systems documentation is required on programs written and used in the project. These techniques, although widely used in the computer industry, currently receive little attention in academic circles," claimed Roger Jones, president of Cibar Systems Institute.

The off-campus program is taught by consultants at Cibar, Inc. According to Jones, instructors often have between 15 and 20 years practical experience in the computer industry. Jones himself worked for IBM for eight years as a systems designer.

"As a result of our experience we are able to bring state-of-the-art experience into the classroom," Jones said.

The program has received an enthusiastic response from Principia students, and

(Continued on Page 80)

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Executive Corner

• James Simpson has been appointed president and chief executive officer of Durango Systems, Inc., San Jose, Calif.

• John A. Buchanan has been appointed president of Ultra Magnetics Technology, Inc., Watsonville, Calif.

• Richard A. Cortese has been elected president and chief executive officer by the board of directors of Alpha Microsystems, Inc., Irvine, Calif. Cortese succeeds Richard B. Hitchcock, who will assume the newly created positions of vice-chairman of the board of directors and director of research.

• Ursula F. Fairbairn has been named vice-president, marketing operations-West, of the Information Systems Group/National Accounts Division of IBM.

• Gail R. James has been promoted to vice-president of marketing for North Star Computers, Inc., San Leandro, Calif.

• Dan Bowers has been named vice-president and general manager of PDS Technologies, Inc. of Fairfield, Conn., a subsidiary of Product Development Services, Inc.

• Gil C. Kellersman Jr. has been appointed vice-president of sales for Ultimacc Systems, Inc. of Waldwick, N.J. Ultimacc Systems is a subsidiary of Storage Technology Corp.

• David H. Zirkle has been appointed senior vice-president, finance, for Racal-Milgo, Inc., Miami.

• Bob Faraguna has been appointed vice-president, engineering; Travis King, vice-president, finance; and Paul Thurman, vice-president, sales, of Datastar Systems, Inc., Laguna Hills, Calif.

• Gerald W. Stanley has been named vice-president of application products for Martin Marietta Data Systems, Inc., Greenbelt, Md., a division of Martin Marietta Corp.

• Dick Siemiatowski has been appointed vice-president of marketing and sales at Applied Micro Circuits Corp., San Diego.

• Helmut Hameyer has been appointed executive vice-president and Ben Adenbaum, senior vice-president, at Warner Computer Systems, Inc.

• George H. Dudley has been appointed vice-president, marketing operations-East, and John D. Ludden has been named vice-president of support services within the customer service organization at Prime Computer, Inc.

• William T. Schaefer has been named vice-president of sales and marketing at Cadlinc, Inc., Elk Grove Village, Ill.

• Norman Lange has been elected corporate vice-president, marketing, for General Instrument Corp. of New York.

• Michael S. Cooper has been named vice-president, insurance industry region, for Mohawk Data Sciences Corp.'s MDS Systems Division, Parsippany, N.J.

A powerful CPU is like a clever mind. Neither realizes its full potential without the ability to listen and reply. I/O bottlenecks stifle the responsiveness of any good system.

In the *Computerworld* November 29th Special Report on "Computer Input/Output," you'll read how to get more I/O for the dollar. Editor Tom Henkel has gathered material from experts involved with all the latest techniques in data entry; from networking to the use of micros, from voice to videotext. You'll get articles and tutorials on using COM, optical character recognition, demand deposit accounting systems, and more.

According to International Data Corporation, the world's largest computer industry research firm, the hottest area in the output side of the market is in printers because of the success of desktops, most of which have one printer per system. At this low end, in the business/professional segment of the desktop market alone, 301,000 printers were shipped in the U.S. in 1981. There were 773,000 total printers (not including high-end electronic typewriters) shipped in the U.S. in '81. On the input side, CRT's are the hottest market segment with more than 1,088,000 CRTs shipped in the U.S. in 1981.

Keeping up with this market is vital to the success of any operation, and this November 29th — you'll be brought up to date. And if you sell to buyers in the I/O marketplace, you'll want your ad where your buyers are — reading "Computer Input/Output" in our November 29th issue.

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Mergers & Acquisitions

Electronic Data Systems Corp. (EDS) of Dallas has acquired **Virginia Data Center, Inc.**, a Norfolk, Va. data processing firm. The firm will become part of EDS' Cunadata Division, which serves credit unions in the Virginia, Washington, D.C. and Maryland areas.

Electronic Data Systems Corp. has acquired **Automated Health Systems, Inc.**, of St. Louis. Terms of the acquisition were not disclosed.

Monchik-Weber Corp. has acquired the assets of the Chicago operation of **Metro Data Co.** of Minneapolis for $1.5 million in cash and contingent cash payments.

Onyx-Imi, Inc., of San Jose, Calif., has reached an agreement to acquire **Mercator Business Systems, Inc.** of Sunnyvale, Calif., in exchange for stock. Mercator will become part of Onyx-Imi's microcomputer division, Onyx Systems.

Dataproducts Corp. has reached an agreement in principle to acquire **Integral Data Systems, Inc.** in exchange for 900,000 shares of Dataproducts stock.

College Beats Education Costs

(Continued from Page 77)

companies such as Hewlett-Packard Co. and the First National Bank of Boston have expressed interest in employing graduates of the program.

Next year, five other colleges in Nebraska, Illinois, Kansas and Missouri are expected to join the off-campus program.

Attention From Academics

The off-campus program has also received attention from academics at the regional level.

Dr. Thurston Manning, director of higher education institutions at the North Central Association of Colleges and Schools in Chicago, said that it was too early to tell whether the Cibar program could be universally applicable to the requirements of liberal arts colleges.

However, Manning added: "We are at a point now where graduates clearly need to have a knowledge of computer science.

"If liberal arts colleges want to offer this as a major program they are going to have to make substantial investments in equipment and personnel," he said.

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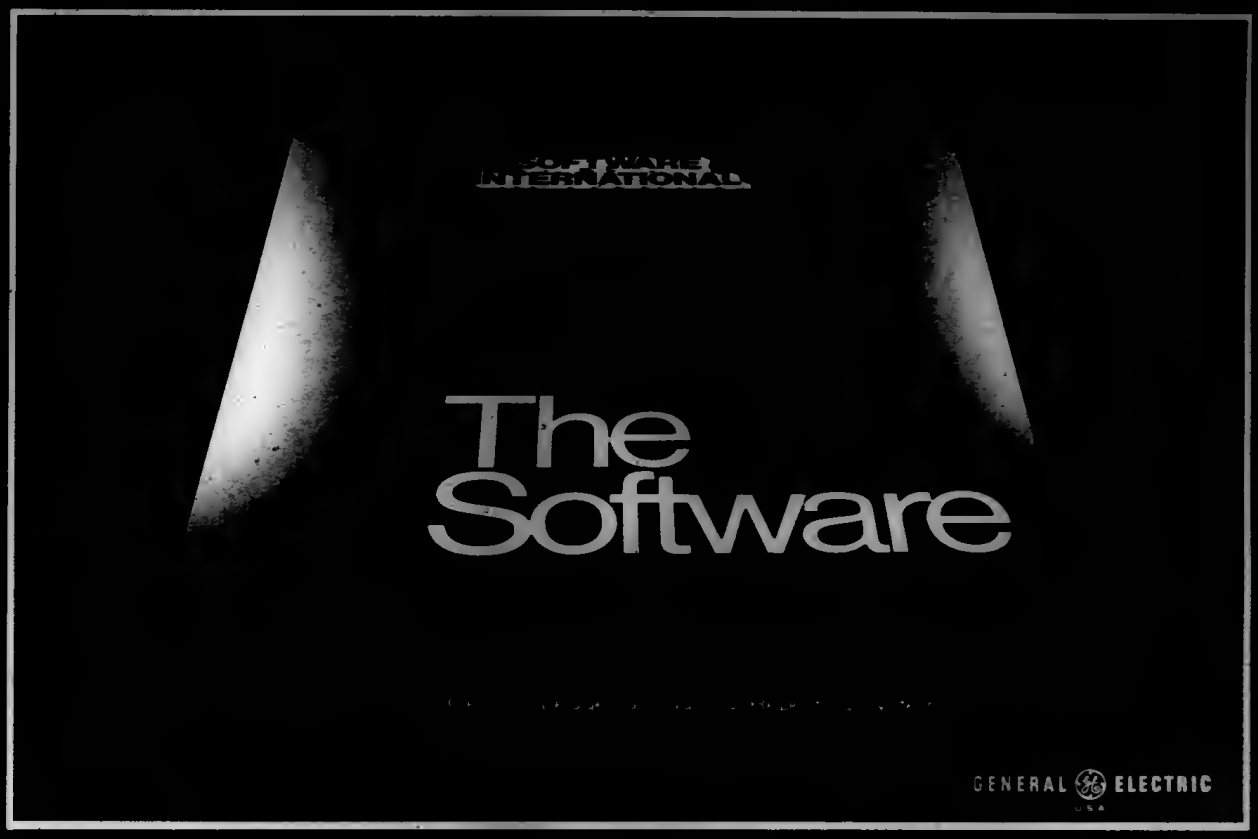

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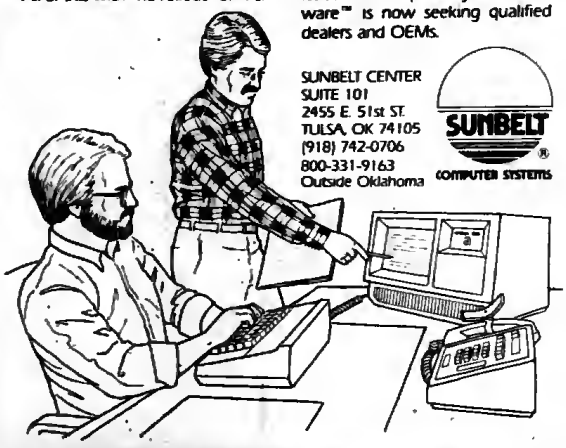

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Third-Party Lessors at Meet Ponder IBM's Latest Moves

(Continued from Page 69)

R.M. Hayden, IBM corporate director of industry relations, in effect agreed with that assessment, saying that limitation on the IBM leases guarantees the continued health of the leasing firms. Hayden and other IBM executives here also supported the belief that the firm is experimenting with new business approaches.

For example, the IBM representatives admitted that the company has given almost no thought to what happens when the new leases end three to five years down the road. "The whole idea of how we're going to remarket [returned equipment] is distasteful" to the company, Hayden said.

But if the new IBM strategies are not driving leasing firms out of the market, several CDLA members here said the leases have already cost third-party firms some business, especially in the mid-range of equipment, such as 4331s and 4341s. In the words of one attendee here, the IBM moves are keeping the lessors honest.

No More Safe Path

If IBM is putting pressure on the leasing companies, the new arrangements also change the way end users must do business with IBM. No longer can a DP manager choose the safe path of short-term IBM leases, according to Edward Cherney, president, CMI Corp., Troy, Mich., who said any DP executive who does not become adept at choosing the best equipment financing deal will soon find himself out of a job.

As for why IBM has instituted the new leasing arrangements, a number of possible reasons were put forward here, including the firm's new freedom in the marketplace following the settlement earlier this year of the Justice Department's antitrust suit against IBM.

More puzzling to the CDLA, however, is a recent rapprochement between IBM and the association's membership after almost 20 years of icy relations. The company is now working closely with the CDLA in a number of areas, including resale of used equipment.

CDLA member Harry E. Goetzmann Jr., president of Continental Information Systems Corp., Syracuse, N.Y., suggested that IBM needs to cooperate with lessors and resellers to increase purchase of its equipment, to manage its earnings and to ensure steady cash flows better.

Supporting Goetzmann's theory, Hayden told the CDLA attendees: "Clearly, our emphasis is on purchase, but . . . it's a lease marketplace to the user."

According to F.G. Rogers, IBM vice-president of marketing, the firm recognizes that as an aggregate, the CDLA members are "IBM's largest customer."

Heilborn noted, "It is in their interest to be cooperative with us." "They're picking our brains," Tom Martin, president of Computer Financial, Inc. in Hackensack, N.J., added. Martin said that there is no telling what IBM will do with this new information. Clearly, the fear among CDLA members is that IBM's developing expertise in the leasing area, backed with strong financial power of its leasing partners, including Merrill Lynch, could be used to try to drive out competition.

If that eventuality seems far-fetched at the moment, Martin noted that the economic recession is drying up the investment capital third-party firms need to arrange equipment leases. This then forces the lessors to increase their rates, making the IBM long-term leases even more competitive. The end result, he said, is that IBM could suddenly attract many of the lessors' current customers.

CMI's Cherney seconded that warning, saying that IBM users could again find themselves subject to "the whim of IBM," as they were before the advent of the third-party leasing industry. While noting the lessors are certainly looking out for their own best interests, Cherney said that he would tell users "we're in the forefront fighting the battle [against IBM dominance] . . . If we fail, [users] fail."

Heilborn Elected To CDLA Chair

WHITE SULPHUR SPRINGS, W. Va. — George H. Heilborn, president of IPS Computer Marketing Corp. in Paramus, N.J., was elected chairman of the board of the Computer Dealers and Lessors Association (CDLA) at the association's recent annual meeting here.

Heilborn was succeeded as CDLA president by Richard A. Forsythe, of Forsythe/McArthur Associates, Inc., Chicago.

Other new CDLA officers are Olie E. Swanky, Greyhound Computer Corp., Phoenix, vice-president; Barry P. Korn, Barrett Capital & Leasing Corp., White Plains, N.Y., vice-president; William A. Castellano, NF Computer Sales & Leasing Corp., Oak Brook, Ill., treasurer; and Kenneth H. Searl, Kennsco, Inc., Maple Grove, Minn., secretary.

James F. Benton continues as executive director of CDLA, which also elected three new members of the board of directors for three-year terms: Edward Cherney, CMI Corp., Troy, Mich.; J.E. Goodman, Economic Computer Sales, Inc., Memphis, Tenn.; and Kenneth B. Steinback, Computer Sales International, Inc., St. Louis.

Continuing as board members are Dwight L. Miesse, JMS Computer Associates, Alpharetta, Ga.; Jerry Minsky, Technology Finance Group, Inc., Westport, Conn.; Harry E. Goetzmann Jr., Continental Information Systems Corp., Syracuse, N.Y.; Kenneth N. Pontikes, Comdisco, Inc., Rosemont, Ill.; Duane Whitlow, Duane Whitlow & Co., Inc., Richardson, Texas; and Robert A. Gulko, Unicom Computer Corp., Sausalito, Calif.

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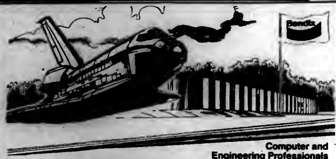

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USL Computer Science Dept.
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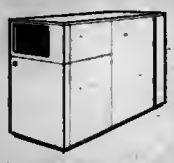

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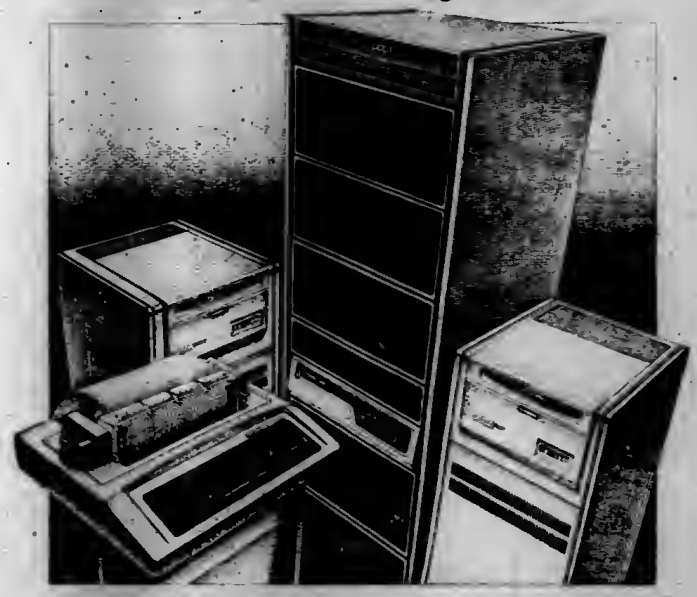

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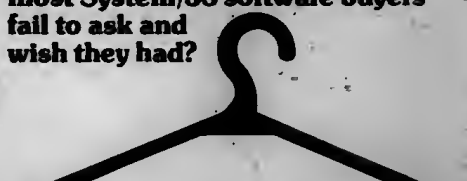

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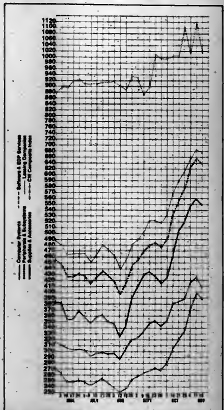

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CLOSING PRICES WEDNESDAY, NOVEMBER 17, 1982

EXCH		1981-82 RANGE (1)	CLOSE NOV 17 1982	WEEK NET CHNGE	WEEK PCT CHNGE
	COMPUTER SYSTEMS				
A	AMDAHL CORP	12- 39	31 1/8	- 7/8	-2.7
N	BURROUGHS CORP	28- 48	43	-3 1/4	-7.0
N	COMPUTER AUTOMATION	7- 17	14 3/8	- 3/4	-4.9
N	CONTROL DATA CORP	21- 42	38 3/8	-1 2/8	-3.3
N	CRAY RESEARCH INC	20- 41	36 3/4	-2 5/8	-6.6
N	DATA GENERAL CORP	20- 59	38 5/8	-2 1/2	-5.9
A	DATAPOINT CORP	11- 58	20 3/4	-1 3/8	-6.2
N	DIGITAL EQUIPMENT	62-109	103 1/4	- 1/4	-0.2
A	[illegible] INC	6- 11	10 3/4	+1 1/4	+13.1
N	ELECTRONIC ASSOC.	5- 12	7 3/8	- 5/8	-8.2
N	FLOATING POINT SYST	18- 30	24	- 1/2	-2.0
O	[illegible]	22- 38	32 7/8	-2 3/4	-7.7
O	GENERAL COMP CRP	1- 3	1/4	0	0.0
O	GENERAL AUTOMATION	- 8	8	+ 1/2	+6.6
N	HARRIS CORP	20- 41	36 1/4	-2 1/4	-5.8
N	HEWLETT-PACKARD CO	36- 71	89 1/8	+1	+1.4
N	HONEYWELL INC	60-104	102	+2	+2.0
N	IBM	48- NC	94	- 3/8	-0.4
O	IPL SYSTEMS-CLA	5- 9	7 3/4	- 1/2	-6.0
O	MAGNUSON COMP SYSTS	2- 10	4	0	0.0
O	MANAGEMENT ASSIST	7- 18	11 7/8	+1 1/4	+9.2
O	MINI-COMPUTER SYST	1- 4	1/4	0	0.0
A	MODULAR COMPUTER SYS	8- 12	12	+ 1/8	+1.0
A	[illegible] DATA SC	10- 19	10 7/8	-1 1/8	-8.2
N	NCR	39- 84	86 1/8	+ 1/2	+0.9
N	PERKIN-ELMER	20- 32	28 1/8	-2 5/8	-8.2
A	PRIME COMPUTER INC	16- 38	37 1/2	- 1/2	-1.3
N	SPERRY CORP	21- 37	31 3/8	+ 1/8	+0.3
O	TANDEM COMPUTERS INC	14- 24	23 3/8	+1 7/8	+8.0
N	TEXAS INSTRUMENTS	71-123	129 7/8	+ 1/8	0.0
A	WANG LABS CL B	23- 53	52 3/8	+ 5/8	+1.2
A	WANG LABS CL C	21- 53	52 7/8	+1 1/4	+2.4
	LEASING COMPANIES				
O	BOOTHE FINANCIAL CP	22- 28	24	0	0.0
N	COMDISCO INC	13- 28	27 1/2	- 1/2	-1.7
O	COMPUTER GROUP CORP	1- 1	3/8	0	0.0
O	COMPUTER INVESTORS GRP	1- 2	3/8	0	0.0
O	CONTINENTAL INFO SYS	5- 15	17	-1 3/4	-9.3
O	DPF INC	7- 13	10 1/8	0	0.0
O	ITEL	1- 1	5/8	0	0.0
O	LEASPAC CORP	1- 2	1/8	0	0.0
N	U.S. LEASING	18- 39	34 1/2	- 1/2	-1.4

EXCH: N=NEW YORK; A=AMERICAN; P=PHIL-BALT-WASH; B=BOSTON; L=NATIONAL; M=MIDWEST; O=OVER-THE-COUNTER
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EXCH		1981-82 RANGE (1)	CLOSE NOV 17 1982	WEEK NET CHNGE	WEEK PCT CHNGE
	SOFTWARE & EDP SERVICES				
O	ADVANCED COMP TECH	1- 8	2	+ 1/4	+14.2
O	ADVANCED SYSTEMS INC	5- 19	14 3/4	-1 1/4	-7.8
O	AGS COMPUTERS INC	7- 18	13	-1 1/2	-10.3
O	ANACOMP INC	9- 10	14 3/4	- 3/8	-2.4
O	ANALYSTS INTL CORP	5- 8	8 1/4	-1	-13.7
O	APPLIED DATA RES.	16- 41	40 3/4	+1 1/8	+2.8
O	[illegible] COMPUTER SYSTEMS	12- 24	22 1/8	-1 1/8	-4.8
O	ASTRADYNE COMP IND	1- 9	2 1/4	- 1/4	-10.0
N	AUTOMATIC DATA PROC	21- 33	30 1/8	+ 1/2	+1.5
O	CBA COMPUTER ASSOC	5- 9	9	+1 1/4	+10.5
O	COMPUTER ASSOC INT L	13- 26	35	0	0.0
O	COMPUTER HORIZONS	1- 3	3 1/2	- 3/4	-17.6
O	COMPUTER NETWORK	4- 8	7 3/8	0	0.0
A	COMPUTER SCIENCES	11- 20	18	- 3/4	-4.0
O	COMPUTER TASK GROUP	8- 18	17 3/4	+ 1/2	+3.2
O	COMPUTER USAGE	2- 4	3 1/4	0	0.0
O	COMPUTONE SYSTEMS	13- 30	27 5/8	- 3/8	-1.3
O	COMSERV CORP	11- 20	17 1/2	-1 1/4	-6.6
O	CORSHARE	6- 10	[illegible]	- 3/4	-6.6
N	CULLINANE DATABASE	24- 53	50	-3	-5.6
O	CYCARE SYSTEMS INC	8- 16	18 3/4	+ 3/4	+4.0
O	DATA DIMENSIONS INC	1- 3	1/4	0	0.0
O	DATATAB	1- 8	3/4	- 1/8	-14.2
O	DYATRON CORP	2- 4	2 3/8	0	0.0
O	ELECTRONIC DATA SYST	18- 40	40 7/8	-2 1/4	-5.2
O	INFORMATICS INC	10- 24	21 1/8	-1 5/8	-7.1
O	INSYTE CORP	1- 3	1 5/8	- 1/8	-7.1
O	IPS COMPUTER MARKET.	1- 4	1 1/4	0	0.0
O	KEANE ASSOCIATES	4- 5	4 3/4	0	0.0
A	LOGICON	17- 26	24 5/8	- 1/2	-1.9
O	MNGT SCI AMER INC	10- 42	41 1/2	+2	+5.0
O	MATHEMATICA INC	12- 18	14 1/4	- 1/4	-1.7
O	MATHEMATICAL APP GRP	12- 18	17 1/4	+1 1/4	+7.8
O	NATIONAL DATA CORP	13- 23	18 5/8	- 7/8	-4.4
O	PANSOPHIC SYSTEMS	8- 20	17	-1 3/4	-9.3
O	PLANNING RESEARCH	6- 11	10 1/2	+ 3/8	+3.7
O	PROGRAMMING & SYS	1- 2	2	+	+3.1
O	REYNOLDS & REYNOLDS	17- 27	25 3/4	- 1/2	-1.8
O	SEI CORP	21- 49	44 1/4	+ 1/4	+0.5
O	SHARED MEDICAL SYST	26- 48	48 3/8	+ 1/8	+0.2
O	SCIENTIFIC COMPUTERS	8- 12	11 1/4	0	0.0
O	SOFTWARE AG	8- 17	12 3/4	-1 1/4	-8.9
A	TYMSHARE INC	12- 30	22 7/8	+2 1/8	+10.2
A	UCC CORP	10- 14	12 7/8	+ 5/8	+5.1
N	WYLY CORP	7- 13	11 1/2	- 1/4	-2.1
	PERIPHERALS & SUBSYSTEMS				
N	AM INTERNATIONAL	1- 35	2 3/4	0	+2.2
A	ANDERSON JACOBSON	6- 22	21 1/8	- 1/2	-2.3
O	AUTO-TROL TECHNOLOGY	6- 17	15 1/4	+ 1/8	+0.8
O	BANCTEC INC	7- 33	15 1/2	-3 1/4	-17.3
A	BEEHIVE INT L	4- 16	8 3/4	-1 5/8	-16.4
A	BOLT BERANEK & NEW	8- 33	35 1/2	+1 1/4	+4.0
O	CAMBEX CORP	2- 4	2 7/8	+ 1/8	+4.5
N	CENTRONICS DATA COMP	8- 17	14 1/8	-1 1/2	-9.5
A	CETEC CORP	4- 8	5 3/8	+ 1/8	+2.3
O	COGNITRONICS	2- 8	8 1/2	- 3/4	-8.7
O	COMPUTER COMMUN.	1- 2	3/4	0	0.0
O	COMPUTER CONSOLES	15- 36	24 1/4	+1 3/8	-4.7
O	COMPUTER DEVICES INC	4- 21	15 1/8	- 1 1/2	-5.9
O	COMPUTER TRANSCEIVER	4- 7	6 5/8	- 3/8	-5.0
O	COMPUTERVISION CORP	18- 36	34 3/4	-1	-2.7
A	CONRAC CORP	21- 30	29	+3	+0.9
O	DATA ACCESS SYSTEMS	2- 2	1 1/8	0	0.0
O	DATAPRODUCTS CORP	16- 32	26 3/8	-2 1/8	-8.4
A	DATARAM CORP	5- 9	8 3/4	- 3/8	-4.1
O	DATUM INC	2- 4	4 1/4	1/8	-5.7
O	DAVID JAMISON CARLYLE	2- 7	4 1/8	+1 1/8	+37.9
O	DECISION DATA COMPUT	3- 12	10 7/8	0	0.0
O	DELTA DATA SYSTEMS	1- 3	2 3/8	+ 1/8	5.0
O	ELECTRONIC M & R	5- 8	5 5/8	- 1/8	-2.1
O	EVANS & SUTHERLAND	18- 41	37 3/4	- 3/8	-0.7
O	GANDALF TECHNOLOGIES	10- 22	18 1/2	-1 1/4	-10.3
O	GEN'L DATA COMM IND	6- 10	15 1/4	- 7/8	-5.4
O	GENERAL TERMINAL CP	0- 4	3/8	- 1/4	-28.5
O	GREAT SOUTHWEST IND	3- 8	2 7/8	0	0.0
O	HAZELTINE CORP	22- 42	38 3/8	-2 7/8	-6.8
O	ICOT CORP	3- 7	4	- 1/8	-2.9
O	INFORMATION INTL INC	11- 19	18 1/2	- 1/4	-1.3
O	INTEL CORP	21- 42	37	-3	-7.5
O	IPL SYSTEMS INC	5- 8	7 3/4	- 1/2	-6.0
O	LUNDY ELECTRONICS	5- 12	10 1/2	+ 3/8	+3.4
O	MSI DATA CORP	18- 28	28 1/2	- 3/4	-2.7
O	NETWORK SYSTEMS CORP	17- 34	33 7/8	+1	+5.4
O	OMEX	3- 8	3	0	0.0
N	PARADYNE CORP	24- 50	NC	+3 7/8	+8.2
A	PENRIL CORP	7- 12	8 3/8	0	0.0
O	RAMTEK CORP	12- 30	17	- 1/4	-1.4
N	RECOGNITION EQUIP	4- 8	8 3/4	- 1/8	-1.4
O	SCAN DATA	1- 5	1 1/4	+ 1/4	+25.0
A	STORAGE TECHNOLOGY	18- 40	23 1/4	- 1/2	-1.8
O	SYKES DATATRONICS	8- 34	10 7/8	-1 1/4	-10.3
A	T BAR INC	7- 11	8 3/8	- 1/2	-5.6
A	TEC INC	8- 11	7 7/8	+ 1/8	+1.6
N	TEKTRONIX INC	34- 58	54 3/8	-1 3/8	-3.5
N	TELEX	5- 20	18 1/2	+ 5/8	+3.3
O	TESDATA SYSTEMS CP	3- 10	7	1/2	-6.6
O	TIMEPLEX INC	7- 18	14 1/2	1 1/2	-9.3
O	VISUAL TECHNOLOGY	6- 17	15 1/2	-1 1/8	-7.4
O	WILTEK INC	1- 3	1 7/8	0	0.0
	SUPPLIES & ACCESSORIES				
A	AMERICAN BUS PRODS	11- 18	17 3/8	- 1/8	-0.7
O	BALTIMORE BUS FORMS	1- 2	1 1/4	0	0.0
N	BARRY WRIGHT	10- 21	19	-1 7/8	-9.0
O	CYBERMATICS INC	1- 1	7/8	- 1/8	-12.4
O	DUPLEX PRODUCTS INC	12- 20	15 1/4	- 1/4	-1.2
A	ENNIS BUS. FORMS	18- 30	28 3/8	1 1/8	-3.8
N	3M COMPANY	49- 78	73 1/2	-2 3/8	-3.7
N	MOORE CORP LTD	26- 41	38 1/4	-2 3/4	-6.7
A	NASHUA CORP	8- 18	12 3/8	1 3/8	-8.3
N	STANDARD REGISTER	22- 87	NC	+3	+4.7
A	TAB PRODUCTS CO	12- 22	16 1/2	-1 3/8	-9.8
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3. Keeping software up-to-date

Software maintenance costs can amount to more than fifty percent of your total data processing budget.

But with your MSA application package, you get a full year of support services *at no charge* (After that, you can take advantage of our surprisingly affordable support options).

Our customer support organization is the largest in the industry.

We keep track of government regulations, accounting and personnel procedures, and new data processing techniques.

And when new developments affect your system, we provide update bulletins promptly.

We also respond to customer needs and suggestions with timely enhancements and new releases for your system.

At MSA, we keep you *and* your systems up-to-date.

4. Training your people

The MSA Customer Education Program is the most thorough in the industry.

In 1982, for example, we are conducting more than 90,000 student-hours of training.

A broad selection of courses are available, ranging from advanced training for data processing personnel to basic system orientation for end-users.

Workbooks and audio cassettes are also available for on-site training.

5. Reducing implementation time

MSA Implementation Teams have installed more than 7400 software systems worldwide. And we put that experience to work for you beginning with the very first meeting.

We help you work out an implementation schedule that tells you what will happen, when it will happen, and who will be responsible.

Your system is installed by specialists who are experienced with the type of computer hardware your company uses. And they work with you until the system is installed, tested, and operating smoothly.

We even help you handle important details like new business forms, including new check stock, invoices, and so on.

6. What about microcomputers?

For many office productivity and business applications, microcomputers are a practical adjunct to mainframe computing.

Through our Peachtree Software™ Division, MSA can help you co-ordinate your organization's microcomputer software requirements.

You can choose from a full line of comprehensive, yet easy-to-use business applications.

Peachtree's office productivity software products offer an impressive array of functions that include: electronic mail, spreadsheet analysis, word processing, and even a system that checks your spelling.

MSA systems let accountants generate their own financial reports.

Talk to The Software Company

We'd like to tell you more about how our systems can give you ready-to-install solutions.

For more information on MSA systems, please contact Robert Carpenter at (404) 239-2000. Or clip this coupon.

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